PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

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To: Portland Utility Board
Water Bureau Employees and Labor Leaders

Enclosed is the Portland Water Bureau's (PWB) Fiscal Year (FY) 2015-16 Capital Improvement Plan Annual Report (CIPAR). The purpose of this report is to provide information on the current status of major projects (those with a total budget of $500,000 or more) and an appendix of profiles for all projects.

PWB's major efforts in the past fiscal year have focused on strengthening the system to improve reliability and help prepare for a large Cascadia Subduction Zone earthquake. Two major projects to comply with federal regulations neared completion during this fiscal year: reservoirs at Powell Butte and Kelly Butte were on target to be completed at or under budget. The design for the bureau's project at Washington Park was completed at the end of the fiscal year. The Washington Park project will achieve compliance with federal regulations, replace one of the oldest facilities in the water system, and provide a seismically resilient hub for water storage on the west side of Portland. The Willamette River Pipe Crossing, to construct a seismically resilient pipe deep under the Willamette River, achieved approval of an Owner's Representative contract for project management in FY 2015-16. This fiscal year also saw the launch of projects to preserve or protect the largest pipes in the water system with systematic improvements on the three large conduits that carry water from the Bull Run Watershed.

The report and appendix provide information on the expenditures by program and comparisons of projected budgeted amounts to actual spending. All project profiles display the scope, schedule, and budget (called a cost plan), key identifying information, expenditures by fiscal year and by activity, a Gantt chart view of the schedule, and a map of the project location. The forecasts for future project expenditures are the basis of capital improvement planning for future years. Profiles for major projects include a photo page of current project activities.

If you have any questions about this report, please contact the Water Bureau at 503-823-6926.

Sincerely,

Teresa Elliott
Chief Engineer

PORTLAND WATER BUREAU




Capital Improvement Program Annual Report

Fiscal Year 2015–16

October 2016

PORTLAND WATER BUREAU
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Contents

CIP Highlights

The Portland Water Bureau's (PWB) Fiscal Year (FY) 2015-16 Five-Year Capital Improvement Plan (CIP) included approximately $391 million in water system infrastructure needs for the five-year period beginning in FY 2015–16 (in FY 2015–16 dollars). For FY 2015–16, the adopted budget allocation was nearly $69 million. The final revised budget was about $59 million and final expenditures were at about $55 million.

The bureau achieved important milestones on several of its large capital projects during the fiscal year, including four large projects to achieve compliance with the Long Term 2 Enhanced Surface Water Treatment Rule (LT2 rule). Powell Butte Reservoir 2 and Kelly Butte Reservoir projects, in their final phases at the end of FY 2015-16, were on or under budget. Water system pipes at Mount Tabor were disconnected on schedule and the design for Washington Park Reservoir Improvements Project was completed before the end of the fiscal year. The bureau completed all significant construction on the Interstate Facility that houses system equipment, materials inventory, and staff. The year's work also included more than 300 projects to address deteriorating or obsolete equipment, comply with regulations, plan for future reliability, or support renewed growth in the city.

Approximately 66 percent of the $55 million spent in FY 2015–16 was for investments in the distribution system. This included projects to ensure reliability of the pipes, services, pump stations, tanks, meters, services, and valves that are essential to reliably providing water to customers. Notable Distribution Program projects for the year included the Willamette River Crossing, the bureau's Interstate Facility rehabilitation, and a project to relocate the west-side Fulton Pump Station. Projects initiated by other bureaus and agencies—including transportation projects that required relocation of water pipes—were also funded in the Distribution Program.

Another quarter of the $55 million total was spent in the Transmission and Terminal Storage Program. The bulk of the spending was on the projects to achieve compliance with the LT2 rule requirement for covered finished drinking water reservoirs: the large reservoirs at Powell Butte and Kelly Butte, disconnection of the Mount Tabor reservoirs from the drinking water system, and the design work to construct a seismically reinforced covered reservoir at Washington Park. Other major projects in the Transmission and Terminal Storage Program include the start of a strategic effort to assess, repair, and rehabilitate sections of the bureau's large conduits that carry water from the Bull Run Watershed.

Investments for the Customer Service, Supply, Support, Regulatory Compliance and Water Quality, and Treatment programs made up the rest of the capital spending for the fiscal year. The major efforts included emergency response to a heavy storm in December 2015, compliance with federal and safety regulations for the Bull Run Watershed, technology to support field operations, and replacement of outdated or obsolete equipment to support water-supply operations.

Capital Programs

Capital program planning at the Water Bureau is a collaborative effort among CIP Planning, Asset Management, and Engineering Management teams. CIP and Asset Management staff conduct analyses of project costs, benefits, and timing. These analyses are provided to Engineering Management to support decision-making and project sequencing. CIP Planning staff also produce financial and project status reports and participate in management committees to oversee the delivery of capital projects.

The Water Bureau has seven major budget programs: Customer Service, Distribution, Regulatory Compliance and Water Quality, Supply, Support, Transmission and Terminal Storage, and Treatment. The primary drivers of the bureau's capital work have been ensuring the reliable functioning of the drinking water system, replacing assets that are at or near the end of their useful lives, and achieving compliance with federal and state drinking water regulations. This section provides a brief overview of each of the capital programs.

Customer Service Program

The focus of the Customer Service Program is customer contact, billing and collection, water conservation, and providing for the bureau's facilities and grounds. One of the goals of the Customer Service Program is to improve facility security and support emergency preparedness operations.

Distribution Program

The Distribution Program provides water to customers through the network of distribution mains and related facilities. The Distribution CIP Program ensures the reliable functioning of 2,100 miles of distribution mains as well as the pump stations, storage tanks, pressure-regulating stations, control valves, fire hydrants, drinking fountains, and customer service connections that deliver water. Some of the oldest distribution system elements that have reached the end of their useful lives are being repaired, replaced, or eliminated in projects that span several fiscal years. The Distribution Program also provides for the relocation of water pipes to accommodate projects of other public agencies and dozens of projects to support Portland's recent redevelopment surge.

Regulatory Compliance and Water Quality Program

The Regulatory Compliance and Water Quality Program provides for meeting the multiple federal and state standards for drinking water quality, water delivery operations, and meeting the environmental standards related to the bureau's operations in the Bull Run Watershed and the Columbia South Shore Well Field. Federal standards include the source water treatment regulations in the federal Long Term 2 Enhanced Surface Water Treatment Rule (LT2 rule) as administered by the State of Oregon Health Authority (OHA). In 2012, the OHA issued the bureau a variance from the LT2 treatment requirement for source water from the Bull Run Watershed. The variance required the bureau to monitor Bull Run source water for *Cryptosporidium*, maintain all legal land-use protections, and monitor and manage potential

sources of *Cryptosporidium* contamination. While in effect, the variance allows PWB to avoid the cost of building a treatment facility under the Treatment Program.

PWB also maintains an exemption to the federal Surface Water Treatment Rule that otherwise requires filtration for a water source. Maintaining the exemption from filtration requires monitoring and reporting on the status of the water system in the Bull Run Watershed. Through the exemption, the bureau also avoids the cost of building and operating a filtration facility under the Treatment Program.

The bureau's compliance with the Clean Water Act and the Endangered Species Act (ESA) also includes capital projects described in the Bull Run Habitat Conservation Plan (HCP), a regulatory agreement with the National Marine Fisheries Service and the Oregon Department of Environmental Quality. HCP compliance projects include negotiating conservation easements next to selected streams and other projects to improve habitat for ESA-listed fish. Through the HCP agreement, the bureau avoids the cost of providing passage for fish around the two large Bull Run dams.

Supply Program

The focus of the Supply Program is maintaining the reliability of the water supply through effective management of the water supply elements. The Supply Program includes both the Bull Run Watershed and the Columbia South Shore Well Field (CSSWF) backup supply. Projects in the Bull Run Watershed address the proper functioning of watershed assets, such as the dams, the intake and treatment facilities, and the roads that provide access. Projects in the well field ensure the reliable functioning of the groundwater backup supply. The five-year CIP does not include a major expansion of the well field beyond its current capacity. The CSSWF groundwater supply allows the bureau to continue to operate without constructing and operating a filtration facility.

Support Program

The Support Program includes bureau-wide work supporting programs in areas such as finance, data management and technology solutions, human resources, project planning, and master planning. Master planning identifies the need for, and timing of, system improvements or replacements and the most effective strategies for investing in bureau assets. PWB uses asset management practices—such as evaluations of risk, life-cycle costs, and benefit-cost ratios—in conjunction with master planning to identify strategies for repairing, rehabilitating, or replacing system elements.

Transmission and Terminal Storage Program

The Transmission and Terminal Storage Program provides for conveying water from the supply facilities to the retail distribution system and service delivery points for wholesale customers. Projects in this program include the major regulatory compliance and seismic resilience projects for the terminal reservoirs, such as those at Powell Butte, Kelly Butte, Mount Tabor, and Washington Park, as well as ensuring the reliability of the large conduits and transmission mains.

Treatment

The Treatment Program provides for the application of chlorine, ammonia, and sodium hydroxide, as well as regulatory and process-control monitoring for water treatment. The Treatment Program is a key part of the bureau's responsibility to meet or exceed the federal and state requirements for a water system utilizing unfiltered surface water and groundwater sources. The bureau's variance from the LT2 treatment requirements for Bull Run water means that Portland avoids the costs associated with constructing a treatment facility while the variance is in effect.

Major Projects by Program

Total CIP expenditures were about $55 million of the $145 million total revised bureau budget for Fiscal Year 2015-16. Table 1 on page 14 is the Capital Program Status Report from the FY 2015–16 fall budget monitoring process (BMP). Table 2 on page 15 shows the summary by program and subprogram of the revised CIP budget to actual expenditures for the projects profiled in this report and appendix. The differences in the totals for Tables 1 and 2 are the result of using different data sources and parameter selections. Table 1 does not include the costs for fleet vehicle purchases and shows total expenditures including reductions for project costs reimbursed by other City bureaus. Table 2 is more representative of all of the costs that the Water Bureau is responsible for and does not include reductions in project totals due to payments received from other sources. Table 3 shows ongoing expenditures and other project details that are not profiled.

Customer Service

The Customer Service Program included expenditures for a heavy storm in December 2015 that caused major flooding and damage across the system. The bureau's emergency repairs were funded through the Customer Service CIP Program.

Distribution

About $230 million—approximately 59 percent of the total adopted five-year CIP—is dedicated to the Distribution Program, which includes projects in seven water subprogram areas: distribution mains, services, meters, hydrants, valves, pump stations and tanks, and field support. A total of approximately $36.5 million was spent in the Distribution Program during FY 2015–16.

Distribution-system projects were selected through a combination of master planning and the Asset Management Program. Master planning identifies whole-system trends and deficiencies and asset management applies the lens of risk reduction and benefit-to-cost analyses. In FY 2015-16, the major distribution projects included a mix of those to improve system reliability and operations, reduce risks, and accommodate Portland's renewed growth. Notable projects in FY 2015–16 included the following:

Interstate Maintenance Facility Rehabilitation—To seismically reinforce the storage area for system pipes and equipment and bring work areas into compliance with current safety and land-use codes. The project was on track to be completed on budget.

Raymond Tank—To improve operations, including providing a connection to a major wholesale supply line on the east side and configuring the system for greater energy efficiency. Project has been completed.

Willamette River Crossing—To improve seismic reliability and provide reliable transmission between large east-side reservoirs and west-side retail and wholesale customers. The project was in the early design phase.

Greenleaf Pump Station—To replace a deteriorated pump station and tank with an energy-efficient facility that improves system operations and the ability to fight fires in an area close to Portland's Forest Park. The project was slated to complete the design phase on schedule.

Fulton Pump Station—To modernize, replace, and relocate a west-side pump station that was past the end of its useful life (Figure 2). The project adds operational flexibility for west-side pumping. The project was in the construction phase.

Figure 1. Relocation and reconstruction of the west-side Fulton Pump Station as the Hannah Mason Pump Station will provide resilience to natural hazards, system reliability, and improved operating efficiency.

About six miles of new and replacement distribution mains and associated facilities were installed during FY 2015–16 to ensure reliability of the pipes, services, meters, hydrants, and valves that deliver water to customers. The bureau's major focus in the distribution mains subprogram was replacement and maintenance to keep pace with ongoing deterioration. In recent years, however, the growing number of requests for mains to serve new development has been a significant part of the bureau's pipe work. The Distribution Program included replacement of obsolete equipment such as inoperable hydrants and service lines as well as projects to relocate water lines to accommodate other agencies' transportation projects, such as the changes to the Sellwood Bridge ramps (Figure 2).

Figure 2. The Water Bureau closely coordinated water pipe relocation work on the Sellwood Bridge ramps with the Portland Bureau of Transportation and Multnomah County.

Regulatory Compliance and Water Quality

Almost $400,000 funded several projects in the Regulatory Compliance and Water Quality Program in FY 2015–16. Most of the projects were aimed at achieving compliance with the water-quality standards of the Clean Water Act and the habitat requirements for fish listed under the Endangered Species Act (ESA). The habitat improvement projects are described in detail in the Bull Run Habitat Conservation Plan, available on the Water Bureau website. At the beginning of FY 2015-16, PWB launched a capital project to remodel part of the bureau's existing Water Quality Laboratory to support the water quality analysis required to maintain the bureau's LT2 variance (described on pages 6 and 7).

Supply

Approximately $1.4 million was invested for Supply Program improvements to facilities in the Bull Run Watershed and the Columbia South Shore Well Field (CSSWF). The majority of the funds were spent in the Bull Run Watershed on continued efforts to bring access roads up to current safety standards. The suite of road projects must be carefully coordinated with the summer work window and other projects in the watershed. Projects in the CSSWF include improvements to groundwater wells to increase operational efficiency, reduce maintenance, and extend the life of existing equipment; and the planning and design of a project to improve the reliability of electrical components for the bureau's backup supply. The CIP does not include any major expansions of the well field beyond the current capacity.

Figure 3. Safety upgrades and road repairs in the Bull Run Watershed, such as these on Road 1010, must be completed during summer.

Support

The bureau funded approximately $1.6 million of CIP work in the Support Program, which includes master system planning as well as technology improvements. Master planning includes asset management studies to help guide the selection of major capital projects. During FY 2015–16, PWB also continued studies of water quality, assessments of high-risk water pipes that cross transportation corridors, and a major study to assess and reduce seismic risk to the system. Technology improvements included a project to add modules to the mobile field work-order application to improve efficiency, plan maintenance strategies, and provide more detailed project cost information.

Transmission and Terminal Storage

System investments in the Transmission and Terminal Storage program were approximately $14.5 million in FY 2015–16. Major achievements in this program include final construction phases on two large capital projects for compliance with the LT2 rule. Work on Powell Butte

Reservoir 2 and Kelly Butte Reservoir neared completion at the end of the fiscal year. The Powell Butte project was on track to be completed on budget; the Kelly Butte project was on track to be completed at less than the initial budget estimate.

The bureau achieved LT2 compliance for a third project at Mount Tabor during the fiscal year as well. The Tabor Reservoir Adjustments Project includes disconnection of the uncovered drinking water reservoirs 1, 5, and 6 from the public water system, which was required by December 31, 2015. The remainder of the project includes installation of a large transmission pipe across the Mount Tabor site and other work to preserve the character of the reservoirs and park as directed by the Portland City Council.

The bureau's fourth large LT2 compliance project was the Washington Park Reservoir 3 Project. In addition to achieving compliance with the drinking water reservoir requirements of the LT2 rule, the project will replace one of the oldest elements in the water system and retrofit the Washington Park site to withstand shaking from an earthquake and movement from a landslide (Figure 3). The project final design, completed at the end of FY 2015-16, provides a clear picture of the requirements for construction and increased the overall project estimate to $190 million. This complex, multi-stage project is on track to achieve the LT2 rule compliance deadlines and is slated to be completed by 2024. Progress updates and other details on the Washington Park project are available on the Water Bureau website.

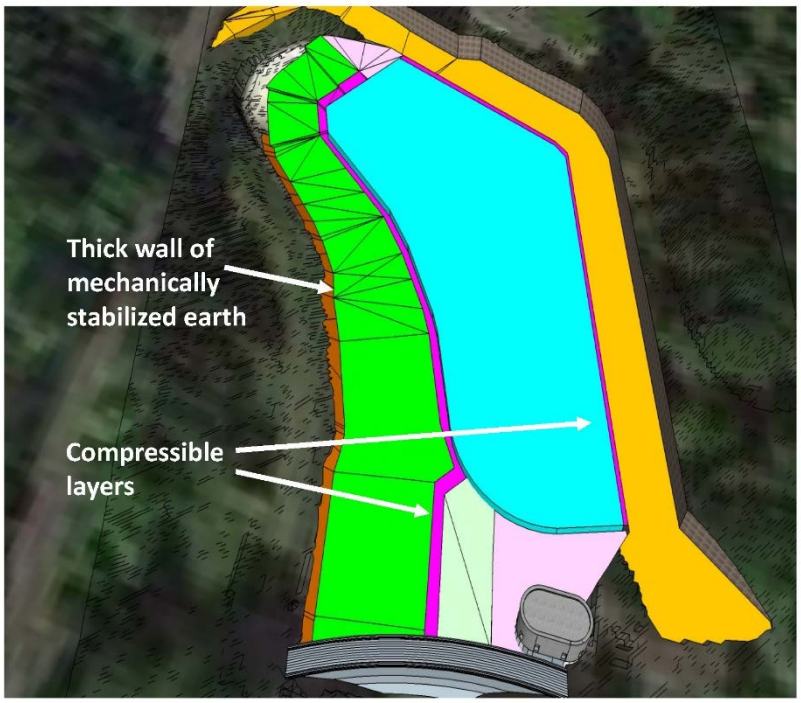


Figure 3. Design-phase plans for the Washington Park Reservoir project, completed in FY 2015-16, include multiple measures for strengthening the site.

Other projects in the Transmission and Terminal storage budget included the disconnection of Mount Tabor Reservoir from the drinking water system for compliance with the LT2 rule and projects to inspect and strengthen the bureau's large conduits. The conduit projects are part of

a strategic effort to systematically assess and improve the conduit transmission pipes that carry water west from the Bull Run Watershed.

Treatment

The bureau invested approximately $346,000 in FY 2015–16 in projects for the Treatment Program. Two of the projects—the Headworks Generator Improvement and the Lusted Hill Generator and Room Remodel—will improve the reliability of electrical power and reduce safety hazards at the bureau's two primary supply operation and treatment facilities, the Headworks Facility in the Bull Run Watershed and the Lusted Hill Facility. Both projects were in the design phase at the close of the fiscal year. A third project to improve treatment reliability—the Headworks Chlorine Scrubber Project to replace an obsolete piece of treatment equipment—was initiated at the end of the fiscal year.

Summary Tables

Table 1. Water Bureau Capital Program Status Report[a,b]

	FY 2015–16					FY 2016–17				
				Variance[c]					Variance[d]	
CIP Program	Adopted Budget	Revised Budget	Year-End Actuals	Amount	%	Adopted Budget	Fall BMP Revised Budget	Year-to-Date Actuals	Amount	%
Customer Service	$63,000	$400,658	$147,741	($252,917)	(63%)	$66,000	$66,000	$0	$0	0%
Distribution	$44,618,650	$38,648,650	$32,905,415	($5,743,235)	(15%)	$37,704,000	$37,704,000	$0	$0	0%
Regulatory Compliance/ Water Quality	$1,858,500	$958,500	$395,685	($562,815)	(59%)	$2,364,000	$2,364,000	$0	$0	0%
Supply	$4,818,100	$2,473,100	$1,463,442	($1,009,658)	(41%)	$4,769,000	$4,769,000	$0	$0	0%
Support	$2,184,000	$2,184,000	$1,667,912	($516,088)	(24%)	$2,278,000	$2,278,000	$0	$0	0%
Transmission/ Terminal Storage	$14,943,000	$14,333,000	$14,513,782	$180,782	1%	$35,269,000	$35,269,000	$0	$0	0%
Treatment	$285,500	$385,500	$346,372	($39,128)	(10%)	$440,000	$440,000	$0	$0	0%
Total	**$68,770,750**	**$59,383,408**	**$51,440,349**	**($7,943,059)**	**(13%)**	**$82,890,000**	**$82,890,000**	**$0**	**$0**	**0%**

[a]Does not include fleet vehicles.

[b]Total is net of costs transferred to other bureaus for utility relocation cost sharing.

[c]Prior-year (FY 2015–16) variances compare Year-End Actuals to Revised Budget.

[d]Current-year (FY 2016–17) variances compare Revised Budget to Adopted Budget.

Prior-Year (FY 2015–16) Variance Description

Customer Service: Budget was provided to the grant fund in Spring BMP for Winter Storm 2015 Federal Emergency Management Agency grant. Not all of the restoration work was completed prior to June 30, 2016.

Distribution: The reported expenses are under reported due to the inclusion of over $830,000 in interagency revenue and the exclusion of about $2.8 million in fleet vehicle purchases. With those items, total CIP expense is $55.1 million and the overall variance is 7%.

Regulatory Compliance and Water Quality: Easements and improvements towards the Habitat Conservation Plan are not progressing as fast as expected.

Supply: Watershed road projects had a delayed start as staff was assigned to waterline projects supporting development activity. Other roads projects were delayed to allow for bidding with a single procurement. Groundwater Electrical Supply Improvements is experiencing some delays to redesign a smaller project.

Support: Delays in starting the Water Quality study and the Water Distribution System Seismic Study lead to underspending this program budget.

Treatment: Headworks Generator Improvements was about $20,000 underspent from the replanned FY 2015-16 amount.

In Total: Expensed CIP Projects are included.

Table 2. FY 2015–16 CIP Budget to Expenses, July 2015 Through June 2016

Program	Water Program	Water Subprogram	Budget	Expenses[a]
CUSTOMER SERVICE	SECURITY/EMERGENCY MG		$345,113	$147,741
		Customer Service Program Total	**$345,113**	**$147,741**
DISTRIBUTION	DISTRIBUTION MAINS		$13,860,650	$9,297,173
	FIELD SUPPORT		$8,544,000	$8,246,912
	HYDRANTS		$1,812,500	$2,400,470
	METERS		$1,092,000	$894,671
	PUMP STATIONS/TANKS		$8,382,000	$9,142,317
	SERVICES		$4,957,500	$6,593,864
		Distribution Program Total	**$38,648,650**	**$36,575,407**
REGULATORY COMPLIANCE & WATER QUALITY	REG COMP & WQ		$958,500	$395,685
		Regulatory Compliance and Water Quality Total	**$958,500**	**$395,685**
SUPPLY	BULL RUN WATERSHED		$1,254,600	$980,430
	GROUNDWATER		$1,218,500	$483,012
		Supply Total	**$2,473,100**	**$1,463,442**
SUPPORT	BUREAU SUPPORT		$0	$319,609
	PLANNING		$2,184,000	$1,347,841
		Support Total	**$2,184,000**	**$1,667,450**
TRANSMISSION AND TERMINAL STORAGE	CONDUITS/TRANSMISSION		$841,000	$683,086
	TERMINAL RESERVOIRS		$13,492,000	$13,830,696
		Transmission and Terminal Storage Total	**$14,333,000**	**$14,513,782**
TREATMENT	WATER TREATMENT PROG		$385,500	$346,372
		Treatment Total	**$385,500**	**$346,372**
		Grand Totals	**$59,327,863**	**$55,109,879**

[a]Project totals have been rounded to nearest whole-dollar amount.

Table 3. FY 2015–16 Ongoing Expenditures

SAP	Name	FY 2015–16 Actual (Year 1)	FY 2016–17 Plan (Year 2)	FY 2017–18 Plan (Year 3)	FY 2018–19 Plan (Year 4)	FY 2019–20 Plan (Year 5)	FY 2020–21 Plan (Year 6)
WBASPL	**Planning**	$1,348,000	$2,278,000	$2,848,000	$2,848,000	$2,848,000	$2,848,000
WBDIFS	**Field Support**	$3,106,000	$3,855,000	$3,932,000	$3,932,000	$3,976,000	$3,976,000
WBDIHY	**Hydrants**	$2,400,000	$1,369,000	$1,369,000	$1,369,000	$1,369,000	$1,369,000
WBDIME	**Meters**	$895,000	$1,139,000	$1,139,000	$1,139,000	$1,139,000	$1,139,000
WBDISV	**Services**	$6,594,000	$4,545,000	$4,545,000	$4,545,000	$4,545,000	$4,545,000
WBRCRC	**ESA Compliance**[a]	$396,000	$1,964,000	$2,328,000	$ 2,278,000	$ 2,278,000	$2,278,000

[a]ESA is the Endangered Species Act of 1973

Glossary for Project Profiles

Profile Element	Definition and Comments
Part A. Scope	
Original Description/Purpose:	Description of the project scope at the start of the project. What is the project? This text is usually unchanged from the original Project Action Form approved at the start of the project. During design and construction, factors such as site conditions, constructability, and value engineering may change the scope.
Rationale: Plans/Studies & Specifics	This text describes the reason for the project. Some projects have had plans, studies, analyses, or Council authorization. Some specifics from those references to justify the project approval. The text describes "why" we have started the project.
Major changes since start:	This text briefly highlights approved scope, schedule, and/or budget changes, life-to-date. This can be blank if there have been no changes.
Other info/ Coordination:	Includes information such as agency coordination, grant funding, constraints or requirements on the project delivery.
Part B. Schedule	
Initial mention:	When this project was first mentioned (Project Action Form, memo, white paper, master plans).
Initial planned comp:	This was the estimated completion date when the project was first mentioned, or when the first project number was issued.
Current planned comp:	This is the current completion date as known in September 2016. This is the date for end of project as shown in the Gantt chart. This is the project planned completion which is a few months after construction phase is complete. Closeout phase, for some projects can take much longer due to interagency billing or for other reasons. Closeout phase does not include warranty period. Projects can be completed before the planned completion date.
Part C. Cost Plan	
Initial total cost est:	The initial cost estimate is the same as the Original Cost Estimate in the Budget document for major projects. For non-major projects, the initial cost estimate occurs when the project is initiated or in a Basis of Design Report, initial Memorandum of Understanding, or in other significant documents.
FY 15-16 plan on 10/2015:	This is the planned expenditure as of October 2015.
FY 15-16 plan on 5/2016:	This is the planned expenditure as of May 2016.
Overall rate impact %:	Calculated % for CIP. Formula: Project total/$14,000,000.
Debt service, FY 16-17 est:	Estimated annual debt service for project. Calculation by CIP Planning based on funding 80% of the project, 25-year term at 5%.

Profile Element	Definition and Comments
Lifecycle cost est:	Each project is classified as one of 3 categories: Likely increase, Likely decrease, or No material change. Likely increase means the asset's operations and maintenance costs will likely increase. This is the case when it is a new asset such as a new building. Likely decrease means the asset's operations and maintenance costs will likely decrease (e.g., more efficient motors, abandoned mains). No material change is often when the asset has just been replaced or some aspects of operations and maintenance have gone up while others have gone down.
Part D. Identification	
SAP #:	SAP capital project number for the project.
Program:	City budget program assignment for the project.
Subprogram:	Water subprogram category assignment for the project.
Nearest address:	Short form of address (3353 SE Division) or the nearest intersection (SE Division & 34th Ave). Occasionally, for security reasons, the address or the map is ambiguous.
Part E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)	
Project total (actual + all FY plans)	Sum of project total expended to date and also all planned costs from FY 2016-17 onwards.
Past FY Actual (life to 6/30/2016)	Project total actual expenses from the start of the project until June 30, 2016. The actual for FY 2015-16 is included in this figure. The sum amount in this column has been rounded up.
FY 16-17 (FY0 Plan):	Project plan for FY 2016-17 as known in September 2016 when we collect data for this annual report.
FY 17-18 (FY1 Plan):	Project plan for FY 2017-18 as known in September 2016 when we collect data for this annual report.
FY 18-19 (FY2 Plan):	Project plan for FY 2018-19 as known in September 2016 when we collect data for this annual report.
FY 19-20 (FY3 Plan):	Project plan for FY 2019-20 as known in September 2016 when we collect data for this annual report.
FY 20-21 (FY4 Plan):	Plan for FY 2020-21 as known in September 2016 when we collect data for this annual report.
FY 21-22 (FY5 Plan):	Plan for FY 2021-22 as known in September 2016 when we collect data for this annual report.
All following FY Plans:	Sum of FY 2022-23 and FYs further out as known in September 2016 when we collect data for this annual report.

Acronyms and Abbreviations Used in Project Profiles

AMP	asset management plan
AWWA	American Water Works Association
BDR	Basis of Design Report
BES	[Portland] Bureau of Environmental Services
BOM	[Portland] Bureau of Maintenance
BTS	[Portland] Bureau of Technology Services
CADD	Computer Aided Drafting and Design
CI	cast iron
CLEM	Consequence and Likelihood Evaluation Matrix
DI	ductile iron
DSMP	Distribution System Master Plan
EPA	U.S. Environmental Protection Agency
GIS	geographic information system
GW	groundwater
HDPE	high-density polyethylene
HGL	hydraulic grade line
kV	kilovolt
LAP	Likelihood Assessment Process
LEED	Leadership in Energy & Environmental Design
LID	local improvement district
LT2	Long Term 2 Enhanced Surface Water Treatment Rule
MG	million gallons
MHz	megahertz
NTP	Notice to Proceed
O&M	operations and maintenance
OAR	Oregon Administrative Rules
ODOT	Oregon Department of Transportation
OHA	Oregon Health Authority
OPS	Operations
ORS	Oregon Revised Statute
OWAM	Oracle work order management
PBOT	Portland Bureau of Transportation
PCR	Project Concept Report
PGE	Portland General Electric
PS	pump station
PUD	public or people's utility district
PVR	Project Validation Report
PWB	Portland Water Bureau
ROW	right of way
RTU	remote telemetry unit
SCADA	system control and data acquisition
SIP	Safety Investment Program
TVWD	Tualatin Valley Water District
UIC	underground injection control
UPRR	Union Pacific Railroad
USGS	U.S. Geological Survey
VOIP	voice-over Internet protocol
VSA	Vernon-Sabin-Alameda sewer project
VSP	vitrified sewer pipe
WL	water line
WO	water outage

Major Project Profiles

Program- Water Program	SAP	Project	Total	Phase	Page
Distribution - Distribution Mains	W01547	Sellwood Bridge	$778,000	040 Construction	21
Distribution - Distribution Mains	W01590	Willamette River Pipe Crossing	$56,000,000	030 Design	23
Distribution - Distribution Mains	W01651	Raymond Tank Supply Improvements	$995,000	055 Closeout Warranty	25
Distribution - Distribution Mains	W01652	Division St Piping	$2,575,000	055 Closeout Warranty	27
Distribution - Distribution Mains	W01665	SW Nevada E of Macadam	$660,000	040 Construction	29
Distribution - Distribution Mains	W01674	Carolina PS Main Extension Phase 2	$3,662,000	055 Closeout Warranty	31
Distribution - Distribution Mains	W01682	Cornell Road Services - Macleay Park	$830,000	030 Design	33
Distribution - Distribution Mains	W01823	DS - UPRR East Portland Connection	$775,000	055 Closeout Warranty	35
Distribution - Distribution Mains	W01840	SE Flavel St from Henderson to 122nd	$459,000	055 Closeout Warranty	37
Distribution - Distribution Mains	W01841	SW Bancroft Terr near Terwilliger Blvd	$486,000	030 Design	39
Distribution - Distribution Mains	W01842	N Jantzen Ave west of Pavilion	$1,283,000	030 Design	41
Distribution - Distribution Mains	W01865	SW Flower Terrace at Dosch	$541,000	040 Construction	43
Distribution - Distribution Mains	W01880	SW Vista Ave from Spring St to Laurel St	$866,000	030 Design	45
Distribution - Distribution Mains	W02073	SW Boones Ferry Rd at SW Arnold St Bridge	$560,000	030 Design	47
Distribution - Distribution Mains	W02077	SE 20th Ave Oak St north of SE Pine St	$454,000	030 Design	49
Distribution - Field Support	W01400	Interstate Facility Rehabilitation	$49,370,000	050 Closeout	51
Distribution - Pump Stations Tanks	W01358	Fulton Pump Station Improvements	$18,023,000	040 Construction	53
Distribution - Pump Stations Tanks	W01446	Greenleaf Pump Station	$1,710,000	030 Design	55
Distribution - Pump Stations Tanks	W01757	Tabor PS Improvements	$407,000	030 Design	57
Distribution - Pump Stations Tanks	W01848	Council Crest Tank Roof Replacement	$850,000	030 Design	59
Distribution - Pump Stations Tanks	W01883	CANCELLED Verde Vista PS Improvements	$8,000	059 Cancelled	61
Reg. Compliance - Water Quality	W01836	Water Quality Lab Remodel	$450,000	030 Design	63
Supply - Bull Run Watershed	W01816	Road 1010 MP 8.75 - 9.2	$605,000	055 Closeout Warranty	65
Supply - Bull Run Watershed	W01825	Road 10 MP 4.6 - 6.2	$1,280,000	040 Construction	67
Supply - Bull Run Watershed	W01826	Road 10 MP 3.0 - 4.6	$1,346,000	040 Construction	69
Supply - Bull Run Watershed	W01874	Road 10R MP 28.77 - 31.85	$2,100,000	030 Design	71
Supply - Bull Run Watershed	W01875	Road 10H MP 10.95 - 12.56	$1,250,000	030 Design	73
Supply - Bull Run Watershed	W02021	Microwave Communications System	$2,214,000	040 Construction	75
Supply - Groundwater	W01371	Groundwater Electrical Supply Improvements	$1,225,000	030 Design	77
Trans. & Terminal Storage - Conduits Trans. Mains	W01489	Rockwood PUD Meter Vault	$530,000	030 Design	79
Trans. & Terminal Storage - Conduits Trans. Mains	W01724	Sellwood Bridge Betterments	$634,000	055 Closeout Warranty	81
Trans. & Terminal Storage - Conduits Trans. Mains	W02006	Gresham Conduit 2 Trestle Upgrades	$1,150,000	030 Design	83
Trans. & Terminal Storage - Conduits Trans. Mains	W02057	Conduit 3 Internal Inspection	$1,030,000	030 Design	85
Trans. & Terminal Storage - Terminal Reservoirs	W01343	Powell Butte Reservoir 2	$116,312,000	055 Closeout Warranty	87
Trans. & Terminal Storage - Terminal Reservoirs	W01402	Washington Park Reservoir 3	$190,000,000	040 Construction	89
Trans. & Terminal Storage - Terminal Reservoirs	W01424	Kelly Butte Reservoir	$63,571,000	040 Construction	91
Trans. & Terminal Storage - Terminal Reservoirs	W01524	Tabor Reservoir Adjustments	$8,145,000	040 Construction	93
Treatment - Treatment	W01860	Headworks Generator Improvements	$1,670,000	030 Design	95
Treatment - Treatment	W02002	Chlorine Scrubber Replacement	$485,000	030 Design	97

Sellwood Bridge

A. Scope	
Original Description / Purpose:	This project was constructed in two parts to accommodate bridge work schedule. Part 1 work installed 825 feet of 16 inch ductile iron pipe, 2 hydrants, and 1 service. Part 2 work installed 1,071 feet of 36 inch steel pipe, 65 feet of 30 inch steel pipe, one 36 inch valve, one 30 inch valve, one 30 inch ultrasonic flow meter in a dedicated vault, and 65 feet of 54 inch steel casing where the pipe passes through a railroad right of way. Cathodic protection was also added to the steel pipe. The work is part of Multnomah County's Sellwood Bridge replacement project. The project location is the west and east side landing areas for the bridge. Added irrigation service and relocation of domestic and fire service.
Rationale: Plans/Studies & Specifics	Multnomah County/PBOT request.
Major changes since start:	April 2013: scope, cost and schedule added due to county request to relocate additional mains and review various plans. Mar 2014: contractor delay caused cost increase and longer schedule. Sept 2014: delay and cost increase to match county schedule. June 2015: Reduced closeout phase and increased construction phase time while waiting for PBOT IGA. March 2016: additional scope requested by County added cost and delay.
Other info / Coordination:	Multnomah County will reimburse PWB for the work and complete $5M of water relocation at their cost. The total project cost for water is $6M.

B. Schedule	
Initial mention:	12/1/2009
Initial planned comp:	3/16/2015
Current planned comp:	3/31/2017

C. Cost Plan	
Initial total cost est:	$410,000
FY 15-16 plan on 10/2015:	$1,000
FY 15-16 plan on 5/2016:	$68,000
Overall rate impact %:	0.056
Debt service, FY 16-17 est:	$42,058
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01547
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW Macadam Ave & Sellwood Bridge

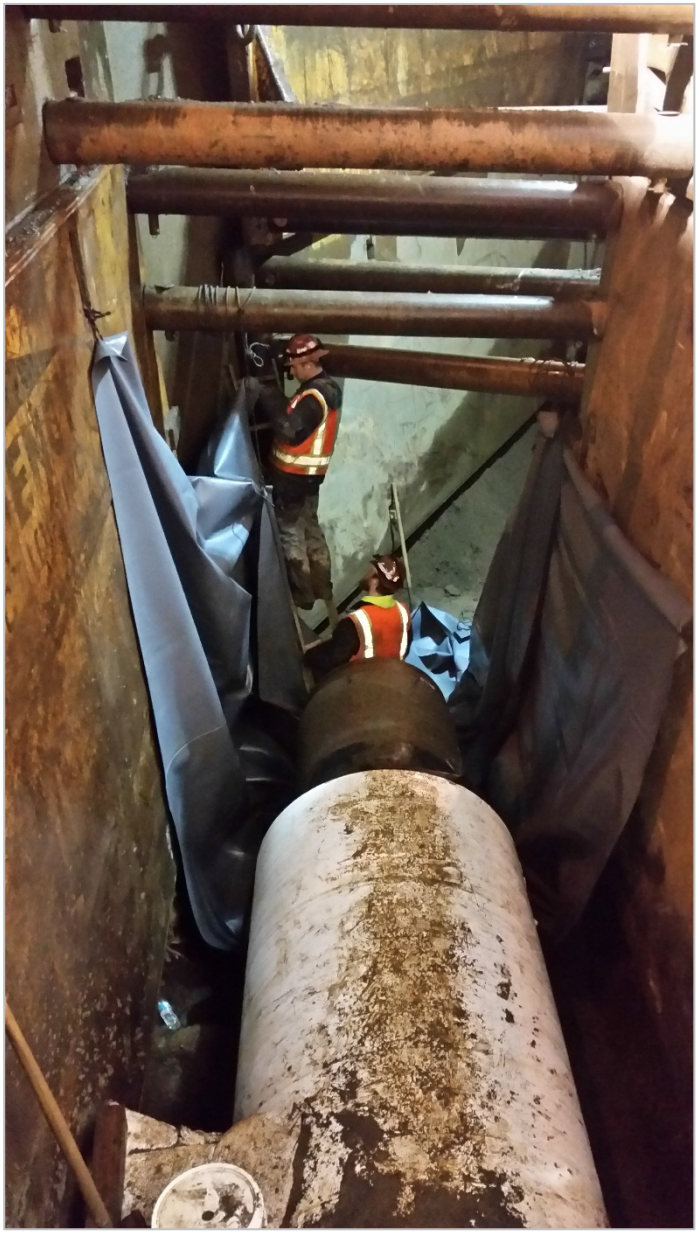
E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$19,577	$19,577		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$360,013	$360,013		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$397,426	$382,426		$15,000	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$778,000	$762,016		$15,000	$0	$0	$0	$0	$0	$0

040 Construction

Section Major Project - Continuing

W01547 Sellwood Bridge



Willamette River Pipe Crossing

A. Scope	
Original Description / Purpose:	This project will build a large pipe crossing of the Willamette River. Existing pipelines across the Willamette River do not meet current seismic code. This project will add a new pipeline built to the current seismic code and will provide a reliable transmission link between Powell Butte and the service areas west of the Willamette River, including downtown and the storage reservoirs at Washington Park.
Rationale: Plans/Studies & Specifics	The project reduces the risk of a major water supply outage in the service areas west of the Willamette River, including downtown and the storage reservoirs at Washington Park. It includes construction of a new seismically strengthened river crossing to replace the first one of potentially two Willamette River crossings, and new transmission piping on both sides of the Willamette.
Major changes since start:	2011: schedule changed to complete geotech and acquire land before design. 2012: project schedule changed to reflect funding availability and allow earlier decision on alignment. 8/14: schedule and multiyear cost plan change for advance approval of alternative procurement. Aug 2015: schedule changes due to management considerations. March 2016: schedule change due to delays in Council approval.
Other info / Coordination:	Schedule overlap in design and construction is due to design-build procurement.

B. Schedule	
Initial mention:	6/1/2007
Initial planned comp:	June 2018
Current planned comp:	3/19/2020

C. Cost Plan	
Initial total cost est:	$57,000,000
FY 15-16 plan on 10/2015:	$2,020,000
FY 15-16 plan on 5/2016:	$150,000
Overall rate impact %:	4.000
Debt service, FY 16-17 est:	$3,027,305
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01590
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	1500 E/ SW HARBOR WAY

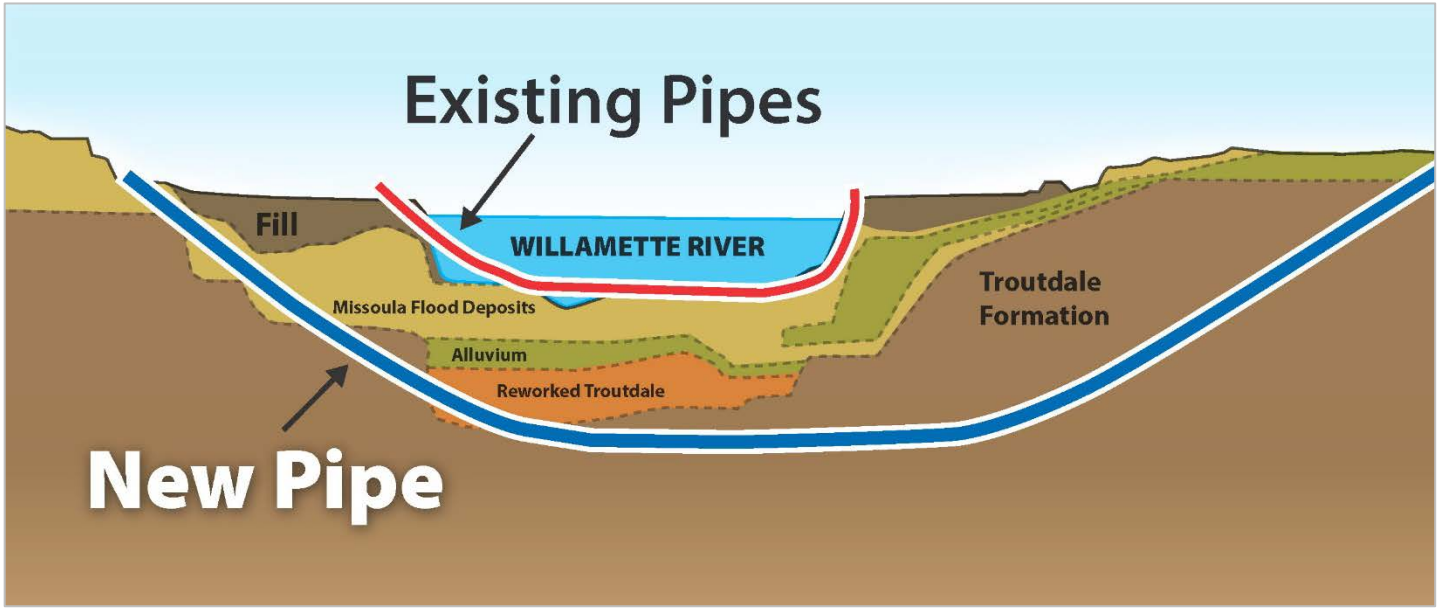
E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

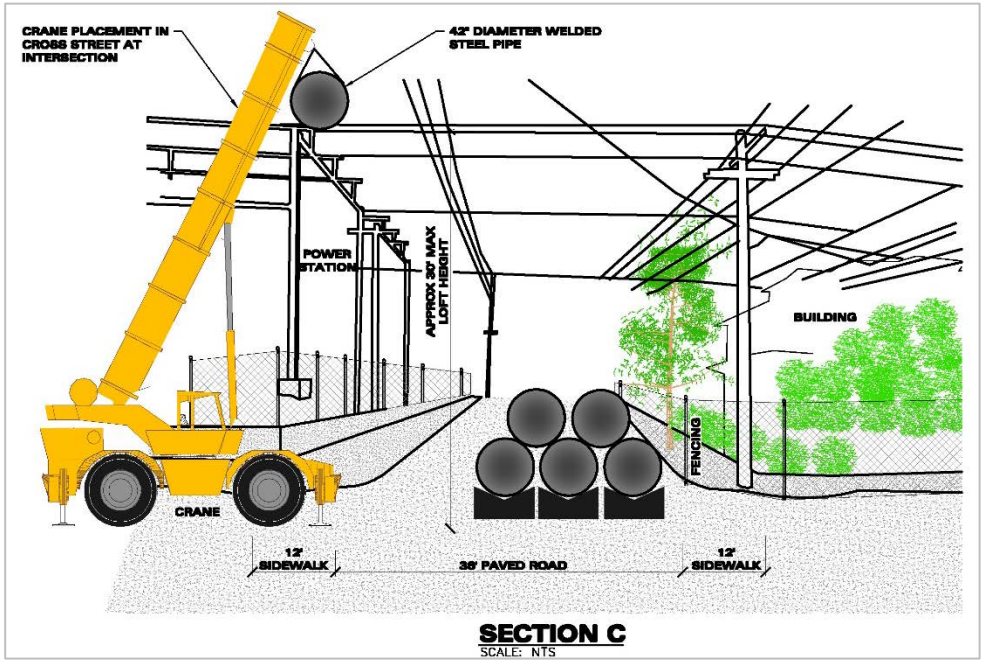
	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)	FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$72,617	$72,617	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$10,156,813	$856,813	$1,900,000	$6,600,000	$800,000	$0	$0	$0	$0
Construction & Land	$45,770,000	$0	$0	$0	$37,800,000	$7,970,000	$0	$0	$0
Other (e.g.contingency	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sum	$56,000,000	$929,430	$1,900,000	$6,600,000	$38,600,000	$7,970,000	$0	$0	$0

030 Design

Section Major Project - Continuing

W01590 Willamette River Pipe Crossing





Raymond Tank Supply Improvements

A. Scope	
Original Description / Purpose:	This project will design and construct improvements at Raymond Tank Site and nearby. The improvements include a Washington County Supply Line connection, SCADA connection, valve vaults, pipe, flow meter, valves, and various appurtenances. For the new scope, the flow meter vault and associated equipment, the altitude and pressure regulator to be located at Raymond Tank site. In addition, Gilbert pump station will be disconnected and a portion of the main will be converted to become future distribution main.
Rationale: Plans/Studies & Specifics	Project will reduce the pumping costs and O&M for the 138th center pump station as well as reducing PWB energy use.
Major changes since start:	May 2012: revised Basis of Design report and a cost-benefit study identified possible changes. Aug 2012: scope, schedule and budget finalized. June 2013: submitted increased construction estimate and design cost. Sept 2014: additional scope and delays increased project total and changed cost plan. Aug 2015: additional scope of 12 inch bypass main increased costs and schedule to complete FY15-16.
Other info / Coordination:	This project will not affect the capacity of the Washington Co. Supply Line and will qualify for an incentive up to $100K by the Energy Trust of Oregon depending on the LEED certification level. The Basis of Design Report was completed in 2009-10 and project was deferred until recent years to limit rate impacts.

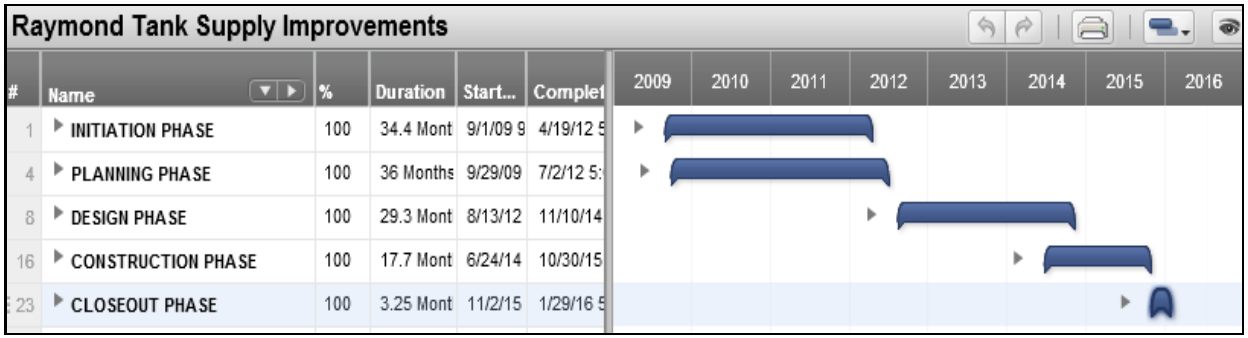
B. Schedule	
Initial mention:	2009
Initial planned comp:	December 2014
Current planned comp:	1/29/2016

C. Cost Plan	
Initial total cost est:	$610,000
FY 15-16 plan on 10/2015:	$83,000
FY 15-16 plan on 5/2016:	$197,000
Overall rate impact %:	0.071
Debt service, FY 16-17 est:	$53,789
Lifecycle cost est:	Likely decrease

D. Identification	
SAP #:	W01651
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SE Raymond Street and SE 136th Avenue

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

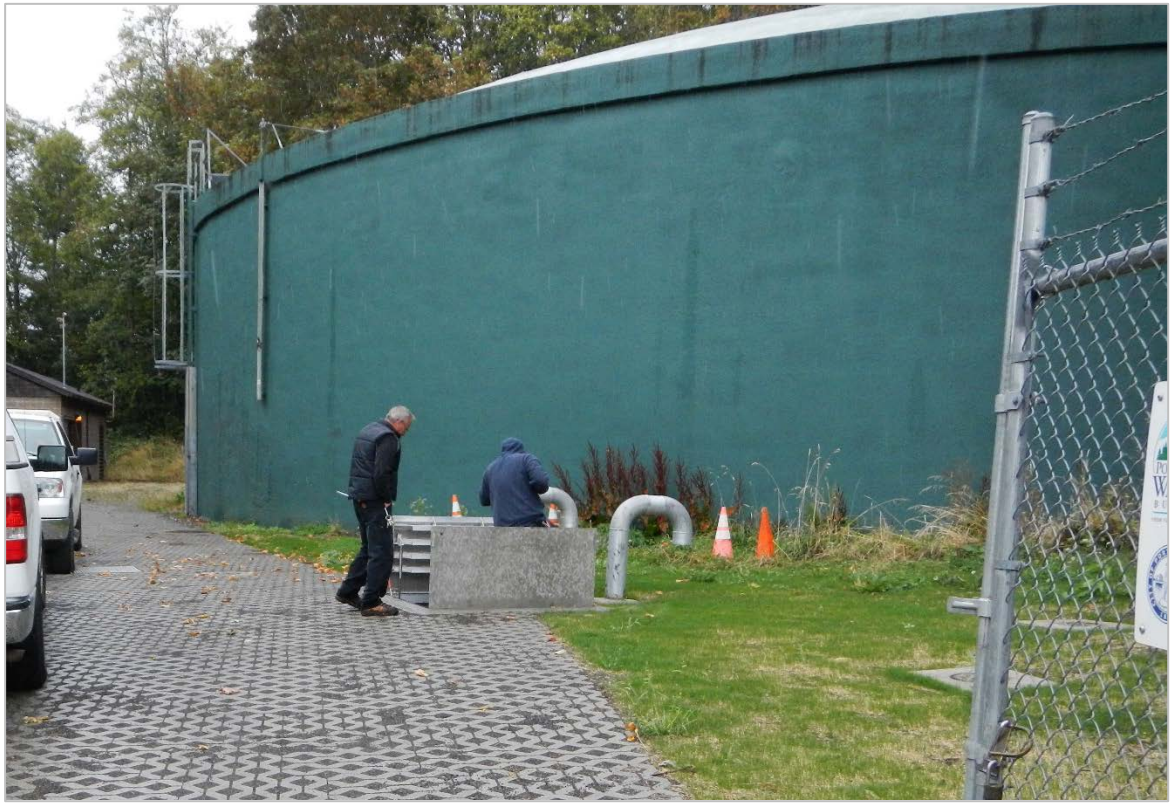
	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$282,508	$282,508		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$709,670	$709,670		$0	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$1,865	$1,865		$0	$0	$0	$0	$0	$0	$0
Sum	$995,000	$994,043		$0	$0	$0	$0	$0	$0	$0

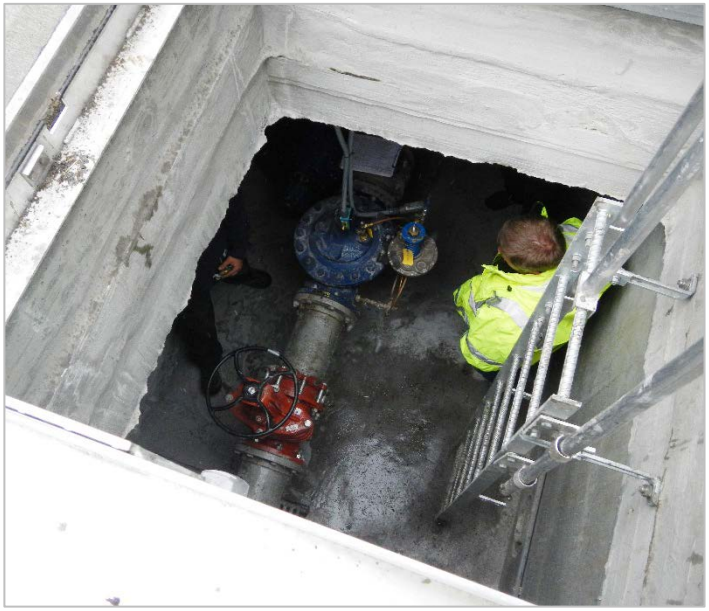


055 Closeout Warranty

Section Major Project - Complete

W01651 Raymond Tank Supply Improvements





Division St Piping

A. Scope	
Original Description / Purpose:	Designed and constructed improvements located in the right of way for the Tabor Reservoir Adjustments project on the distribution and transmission systems and Conduit 2 and 3 in SE Division St. Improvements included multiple connections, pipe, valves, flow meter and various appurtenances.
Rationale: Plans/Studies & Specifics	This project was needed to increase system reliability and supply between the Tabor 411 and Tabor 302 pressure zones. Project provided interties between conduits and supply mains. Project was necessary to disconnect the Mt. Tabor open reservoirs from the public water supply.
Major changes since start:	July 2012: This scope was part of Tabor Res Adjustments project. It is now its own project. March 2013: schedule change to reflect that project will now be a change order rather than a separate procurement. June 2013: new cost plan, but project total unchanged. August 2014: cost and schedule increase due to delays in shutdown sequencing. 3/15: changes in scope and condition created schedule change. 6/15: closeout work delay. Aug 2015: final construction payment to complete project. All work was complete and the project was closed during FY 15-16. Total project cost was $2.6 M.
Other info / Coordination:	

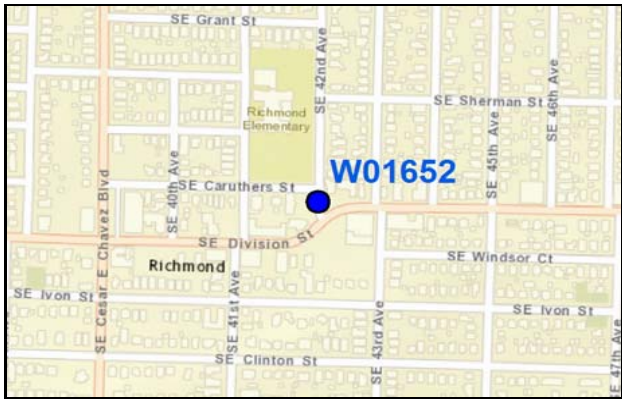
B. Schedule	
Initial mention:	July 2012
Initial planned comp:	January 2015
Current planned comp:	9/25/2015

C. Cost Plan	
Initial total cost est:	$2,000,000
FY 15-16 plan on 10/2015:	$0
FY 15-16 plan on 5/2016:	$3,000
Overall rate impact %:	0.184
Debt service, FY 16-17 est:	$139,202
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01652
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SE Division St in various locations

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$38,629	$38,629		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$2,535,925	$2,535,925		$0	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$438	$438		$0	$0	$0	$0	$0	$0	$0
Sum	$2,575,000	$2,574,992		$0	$0	$0	$0	$0	$0	$0



055 Closeout Warranty

Section Major Project - Complete

W01652 Division St Piping

SW Nevada E of Macadam

A. Scope	
Original Description / Purpose:	The existing 12 inch steel main is approaching the end of its useful life and must be replaced before the suction and discharge piping is installed for the Fulton PS Replacement project. Scope change of 35 feet of 16 inch DI main will also be installed. Project will also abandon 10 feet of 20 inch cast iron and 25 feet of 16 inch cast iron and one 16 inch horizontal gate valve.
Rationale: Plans/Studies & Specifics	The existing 12 inch steel main is approaching the end of its useful life and must be replaced before the suction and discharge piping is installed for the Fulton PS Replacement project.
Major changes since start:	8/2013: schedule and cost increase due to more complete scope of work. 9/2014: schedule and cost plan change to match Fulton Pump Station project but total remains the same. 3/2015: cost, scope and schedule change to match Fulton Pump Station construction; project total unchanged.
Other info / Coordination:	

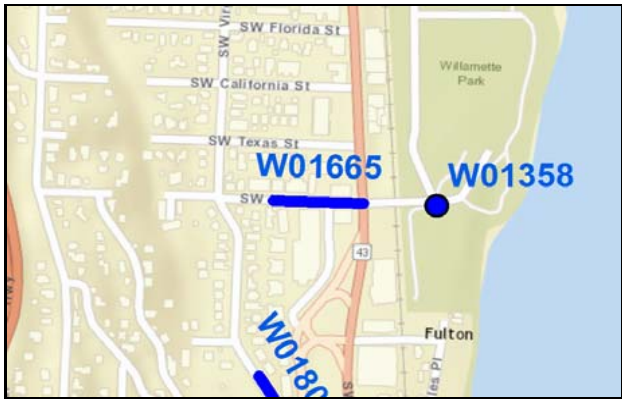
B. Schedule	
Initial mention:	September 2012
Initial planned comp:	December 2013
Current planned comp:	1/13/2017

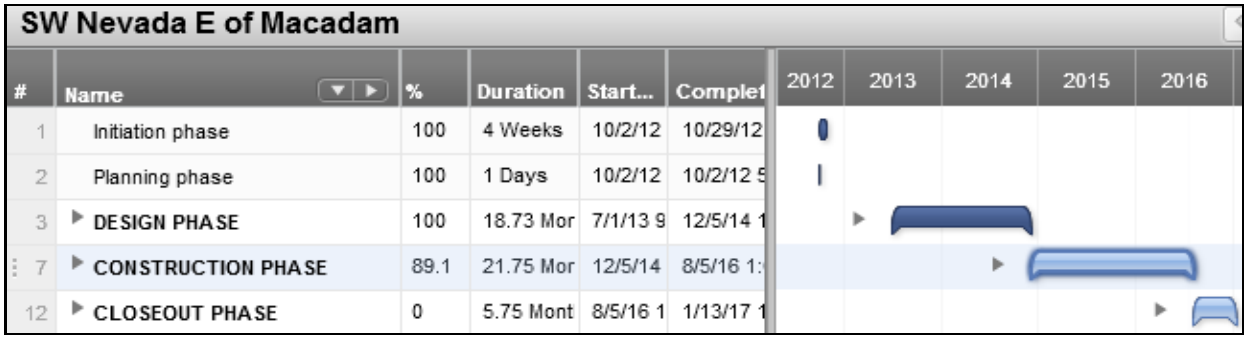
C. Cost Plan	
Initial total cost est:	$684,341
FY 15-16 plan on 10/2015:	$284,000
FY 15-16 plan on 5/2016:	$585,000
Overall rate impact %:	0.047
Debt service, FY 16-17 est:	$35,679
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01665
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW Nevada St and Macadam Avenue

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$65,125	$65,125		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$594,580	$534,580		$60,000	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$660,000	$599,705		$60,000	$0	$0	$0	$0	$0	$0

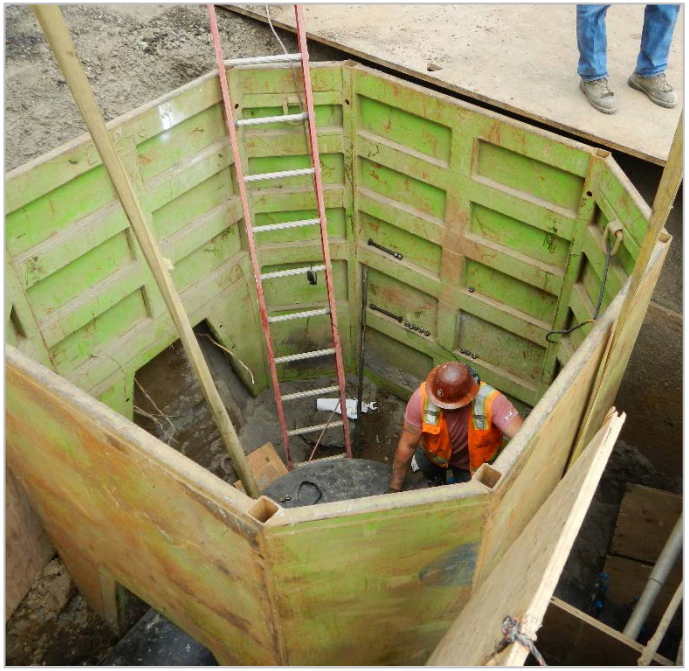




040 Construction

Section Major Project - Continuing

W01665 SW Nevada E of Macadam



Carolina PS Main Extension Phase 2

A. Scope	
Original Description / Purpose:	This project is the second phase of the Carolina Pump Main extension. It will design and construct 3430 feet of 24 inch pump main from SW Chestnut and SW Burlingame Ave to tie into the existing Carolina Pump main at Capitol Hwy and Terwilliger Boulevard. 10/14 addition: reconstruct 300 feet in SW Burlingame Terrace.
Rationale: Plans/Studies & Specifics	The project was based on the poor condition of the Carolina and Fulton pump main (of which a significant portion would be replaced with this project) and the need to have supply redundancy for the entire Burlingame service area. The project schedule has been revised to enable coordination with projects proposed by BES and PBOT.
Major changes since start:	7/2013: phase 2 restarted with available funds. 4/2014: cost plan shift to reflect delay but project total remained the same. Oct 2014: project total increase due to delayed work and also additional scope. Aug 2015: cost increase due to additional main replacement and sewer manhole for road rebuild.
Other info / Coordination:	Phase 2 design stopped in July 2012 (at 90%) to limit rate impact. Land Use Review was authorized to continue. The project plan as proposed is coordinated with BES and PBOT projects to reduce construction costs at the intersection of Capitol Highway and Terwilliger Blvd. This project is related to Carolina Pump Main W01383, where the planning work and the majority of design work was done in previous years.

B. Schedule	
Initial mention:	2012
Initial planned comp:	March 2015
Current planned comp:	10/1/2015

C. Cost Plan	
Initial total cost est:	$3,204,000
FY 15-16 plan on 10/2015:	$0
FY 15-16 plan on 5/2016:	$13,000
Overall rate impact %:	0.262
Debt service, FY 16-17 est:	$197,964
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01674
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW 10th Ave/Burlingame Ave to SW Terwilliger/Capitol Hwy

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$190,836	$190,836		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$3,458,015	$3,458,015		$0	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$12,705	$12,705		$0	$0	$0	$0	$0	$0	$0
Sum	$3,662,000	$3,661,556		$0	$0	$0	$0	$0	$0	$0

055 Closeout Warranty

Section Major Project - Complete

W01674 Carolina PS Main Extension Phase 2

Cornell Road Services - Macleay Park

A. Scope	
Original Description / Purpose:	This project will bore approximately 7,200 feet of 3-inch HDPE main in Cornell Road from the existing 8-inch main east of Skyline Boulevard (Greenleaf 1250 pressure zone) east to the Cornell Road services. This alternative will require up to three 2x2-inch regulators to keep the Cornell Road services supplied at the current HGL of 731 feet.
Rationale: Plans/Studies & Specifics	PWB and Parks agreed to construct a water main and activate service accounts for property owners receiving water from a temporary Parks 5,000 foot water main constructed in 1931. This project will replace the temporary main.
Major changes since start:	8/14: Original design required access through private property and construction in a landslide area. Redesigned alignment increased scope, cost and time. 11/2014: Fall Budget change as a new Major project. 3/2016: delays due to workload issues.
Other info / Coordination:	

B. Schedule	
Initial mention:	January 2013
Initial planned comp:	March 2017
Current planned comp:	11/10/2017

C. Cost Plan	
Initial total cost est:	$830,000
FY 15-16 plan on 10/2015:	$607,000
FY 15-16 plan on 5/2016:	$117,000
Overall rate impact %:	0.059
Debt service, FY 16-17 est:	$44,869
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01682
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	NW Cornell Road

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)	FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$19,392	$19,392	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$186,693	$186,693	$0	$0	$0	$0	$0	$0	$0
Construction & Land	$619,340	$340	$619,000	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$4,000	$0	$0	$4,000	$0	$0	$0	$0	$0
Sum	$830,000	$206,425	$619,000	$4,000	$0	$0	$0	$0	$0

030 Design

Section Major Project - Continuing

W01682 Cornell Road Services – Macleay Park

DS - UPRR East Portland Connection

A. Scope	
Original Description / Purpose:	The project accommodates Union Pacific Railroad's (UP) decision to construct a new track over existing 3, 12 and 16-inch mains. We will abandon 80 feet of 16-inch ductile iron and 98 feet of 3-inch steel mains in NE 2nd Ave, 120 feet of 12-inch main in NE Everett St, and 1,670 feet of 14-inch main in 1st Ave. We will replace with 1,222 feet of 12-inch ductile iron along 2nd Avenue and 243-feet of 16-inch ductile iron in NE 2nd Ave (60-feet of will be encased in a 30-in UP steel casing). Project also includes three services, three new hydrants, one fireline, and backside private plumbing to the new main.
Rationale: Plans/Studies & Specifics	A new Union Pacific (UP) railroad track requires relocation of mains. A section of 1906 14-inch CI main along 1st Ave is within 5 feet of the tracks, shallowly buried, and subject to vibration from rail traffic. It has a high history of leaks. Further, risk analysis shows a break would result in a high probability of damage to the railroad due to proximity, leak history, and surrounding liquefiable soil type with potential interruption of freight and passenger traffic. Maintaining the main requires coordinating permitting, safety and security procedures with UP at the City's expense. Benefit/cost analysis recommends replacement outside of the railroad right of way.
Major changes since start:	8/2014: additional scope and cost change due to a better alignment. 11/2014: Fall Budget change as a new Major project. Aug 2015: contaminated media and paving added costs.
Other info / Coordination:	9/206: project completed. Overall construction was lower than expected.

B. Schedule	
Initial mention:	May 2014
Initial planned comp:	September 2015
Current planned comp:	11/30/2015

C. Cost Plan	
Initial total cost est:	$829,000
FY 15-16 plan on 10/2015:	$2,000
FY 15-16 plan on 5/2016:	$69,000
Overall rate impact %:	0.055
Debt service, FY 16-17 est:	$41,896
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01823
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	Various locations

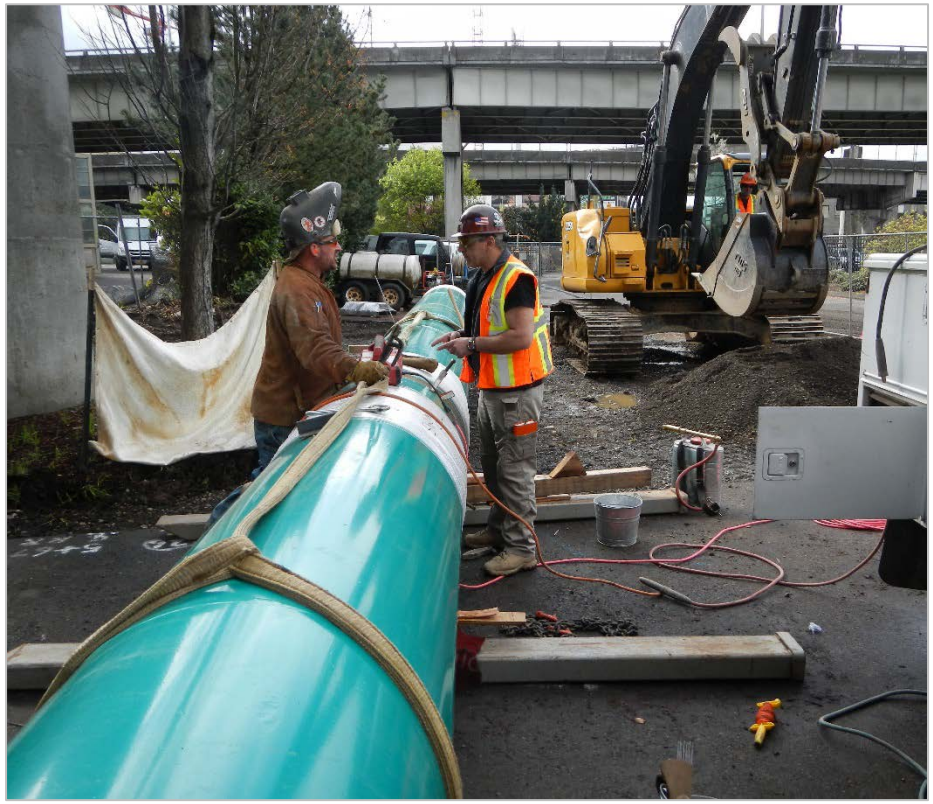
E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$112,790	$112,790		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$659,030	$659,030		$0	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$2,774	$2,774		$0	$0	$0	$0	$0	$0	$0
Sum	$775,000	$774,594		$0	$0	$0	$0	$0	$0	$0

055 Closeout Warranty

Section Major Project - Complete

W01823 DS – UPRR East Portland Connection



SE Flavel St from Henderson to 122nd

A. Scope	
Original Description / Purpose:	This project will replace 845 feet of 4-inch CI main with 390 feet of 12-inch main and 510 feet of 8-inch main and renew 5 1-inch services and install 1 hydrant.
Rationale: Plans/Studies & Specifics	Two dead-end 4-inch mains pose risk of water-quality issues. One of the dead-end mains has leak history; the other reduces available supply to two other pressure zones (Lexington 658 and Lexington 463). Hydrant installation brings area up to zoning requirements for fire suppression. Upsizing the 4-inch CI main in SE Flavel Street from 120th Place east to the existing 12-main in SE Flavel Street is Stage 2 of the original Planning recommendation from 2009 to improve area fire flow.
Major changes since start:	December 2014: minor scope change and corrected initial estimate quantities. March 2016: reduced cost and time as project completed well.
Other info / Coordination:	

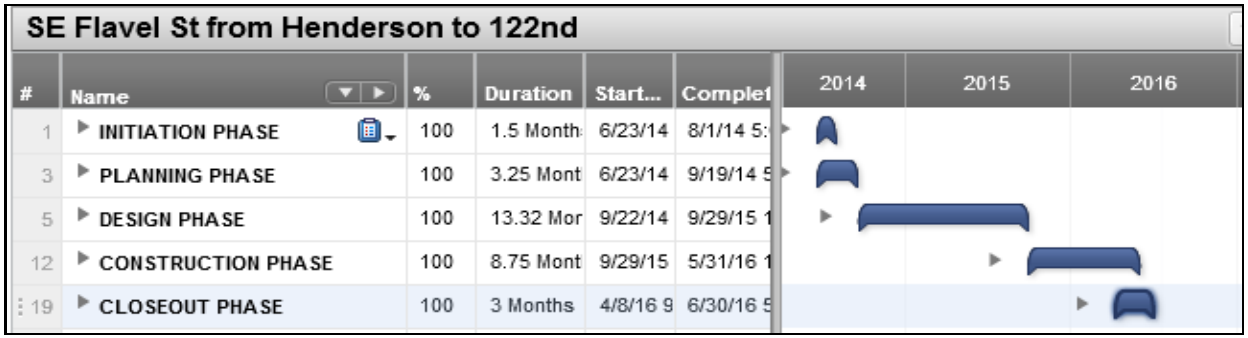
B. Schedule	
Initial mention:	July 2014
Initial planned comp:	September 2016
Current planned comp:	6/30/2016

C. Cost Plan	
Initial total cost est:	$454,000
FY 15-16 plan on 10/2015:	$543,000
FY 15-16 plan on 5/2016:	$401,000
Overall rate impact %:	0.033
Debt service, FY 16-17 est:	$24,813
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01840
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SE Flavel Street from Henderson Drive to 122nd Avenue

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)	FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$2,170	$2,170	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$52,782	$52,782	$0	$0	$0	$0	$0	$0	$0
Construction & Land	$401,170	$401,170	$0	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$2,049	$2,049	$0	$0	$0	$0	$0	$0	$0
Sum	$459,000	$458,171	$0	$0	$0	$0	$0	$0	$0



055 Closeout Warranty Section Major Project - Complete

W01840 SE Flavel St from Henderson to 122nd

SW Bancroft Terr near Terwilliger Blvd

A. Scope	
Original Description / Purpose:	This project will replace 360 ft of 2-inch galvanized main with 6-inch main and replace 280 ft of 2-inch galvanized main with 4-inch main. Install 60 ft of 6-inch main and install 160 ft of 4-inch main. Renew 2 3/4-inch services and relocate 2 3/4-inch services and 1 1-inch service and potentially kill 1 1-inch service. Install 2 hydrants.
Rationale: Plans/Studies & Specifics	The existing 2-inch galvanized main has had 9 recorded leaks with 5 occurring in the last 3 years. The main is in poor condition and the repair crew has recommended replacement. This material is substandard, has a relatively short useful life, is susceptible to water quality deterioration, and is prone to a greater number of leaks than standard materials. In addition, abandoning the main and easement reduces risk of leaks and property damage.
Major changes since start:	Nov 2014: Fall Budget change as a new Major project. Aug 2016: technical adjustment to maintain project total.
Other info / Coordination:	

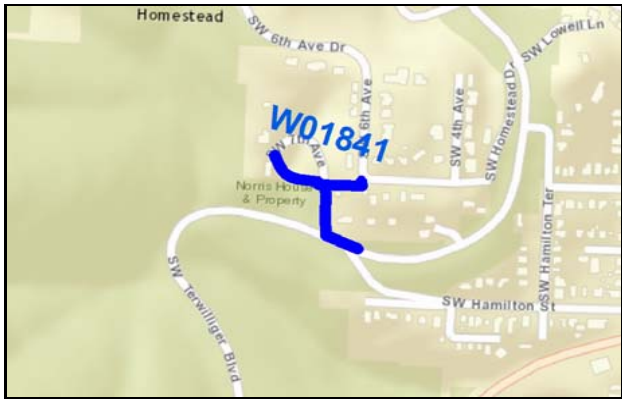
B. Schedule	
Initial mention:	June 2014
Initial planned comp:	December 2016
Current planned comp:	3/22/2017

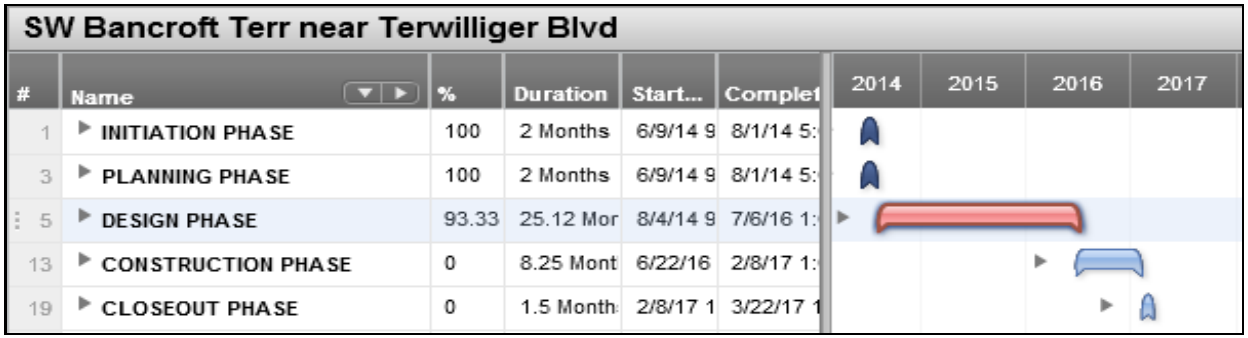
C. Cost Plan	
Initial total cost est:	$486,000
FY 15-16 plan on 10/2015:	$78,000
FY 15-16 plan on 5/2016:	$78,000
Overall rate impact %:	0.035
Debt service, FY 16-17 est:	$26,273
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01841
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW Bancroft Terr near Terwilliger Blvd

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$19,738	$19,738		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$157,205	$157,205		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$308,204	$13,204		$295,000	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$486,000	$190,147		$295,000	$0	$0	$0	$0	$0	$0





030 Design

Section Major Project - Continuing

W01841 SW Bancroft Terrace near Terwilliger Blvd

N Jantzen Ave west of Pavilion

A. Scope	
Original Description / Purpose:	This project will correct services without backflow devices and replace approximately 1,800 linear feet of 8 and 10-inch asbestos-concrete (transite) and PVC main with 1,722 feet of 12-inch ductile iron pipe and 6-inch asbestos-concrete pipe with 6-inch ductile iron pipe. The project will also install 5 fire hydrants and 11 services.
Rationale: Plans/Studies & Specifics	This is ranked high in the project ranking database for the following reasons: (1) as many as six nonstandard services lack complete documentation and appear to lack backflow devices, (2) the nonstandard services have leak histories and undocumented private connections are suspected (3) the asbestos-concrete main (while not affecting water quality) poses a hazard to crews making any repairs.
Major changes since start:	Nov 2014: Fall Budget change as a new Major project. Aug 2016: Technical adjustment to FY17-18 to maintain project total.
Other info / Coordination:	Project was recommended in the Hayden Island Master Plan (2010). A majority of the system on Hayden Island is on private property. PWB will map the location of existing water services. We will also update PWB easements for access and maintenance, as needed. Construction will be required to upgrade nonstandard water services and PWB will address customer responsibilities for backflow prevention.

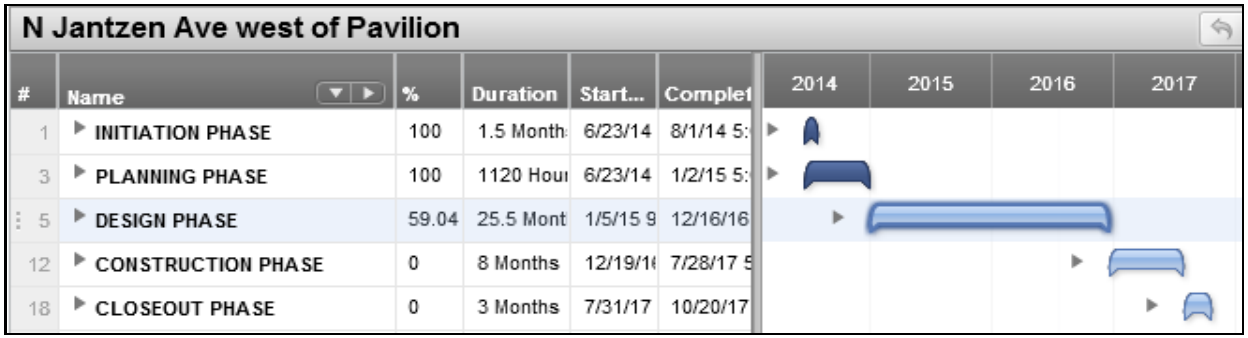
B. Schedule	
Initial mention:	June 2014
Initial planned comp:	August 2017
Current planned comp:	10/20/2017

C. Cost Plan	
Initial total cost est:	$1,283,000
FY 15-16 plan on 10/2015:	$59,000
FY 15-16 plan on 5/2016:	$59,000
Overall rate impact %:	0.092
Debt service, FY 16-17 est:	$69,358
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01842
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	N Starlight Ave & N Jantzen Ave

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$3,621	$3,621		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$129,199	$119,199		$10,000	$0	$0	$0	$0	$0	$0
Construction & Land	$1,130,728	$5,728		$1,125,000	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$19,000	$0		$0	$19,000	$0	$0	$0	$0	$0
Sum	$1,283,000	$128,548		$1,135,000	$19,000	$0	$0	$0	$0	$0



030 Design

Section Major Project - Continuing

W01842 N Jantzen Ave west of Pavilion

SW Flower Terrace at Dosch

A. Scope	
Original Description / Purpose:	This project will replace 1490 feet of 4-inch CI main with 6-inch main and renew 35 1-inch services and install 2 hydrants and replace 1 hydrant.
Rationale: Plans/Studies & Specifics	The existing 4-inch main is in poor condition and has had 2 leaks in the past 7 years. The repair crew has recommended replacement. In addition PWB's current standard is 6-inch main for fire flow. The hydrant replacement and installation will meet standard hydrant spacing requirements.
Major changes since start:	
Other info / Coordination:	

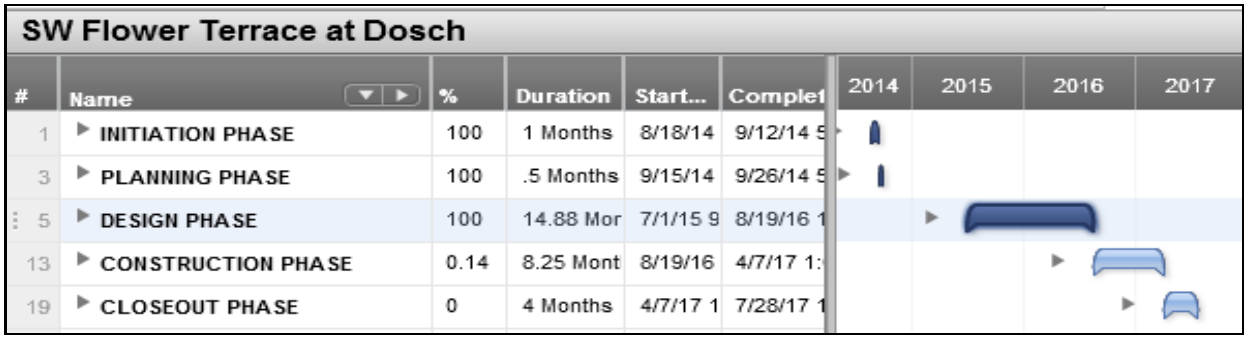
B. Schedule	
Initial mention:	August 2014
Initial planned comp:	July 2017
Current planned comp:	7/28/2017

C. Cost Plan	
Initial total cost est:	$541,000
FY 15-16 plan on 10/2015:	$60,000
FY 15-16 plan on 5/2016:	$60,000
Overall rate impact %:	0.039
Debt service, FY 16-17 est:	$29,246
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01865
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW Flower Terrace from Dosch Road to Dosch Road

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$57,546	$49,546		$8,000	$0	$0	$0	$0	$0	$0
Construction & Land	$482,988	$11,988		$450,000	$21,000	$0	$0	$0	$0	$0
Other (e.g.contingency	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$541,000	$61,534		$458,000	$21,000	$0	$0	$0	$0	$0



040 Construction

Section Major Project - Continuing

W01865 SW Flower Terrace at Dosch

SW Vista Ave from Spring St to Laurel St

A. Scope	
Original Description / Purpose:	This project will install 1078 ft of 8-inch main, 225 ft of 6-inch main, install 3 hydrants, renew 17 1-inch services, renew 1 2-inch fire service, install one 6 inch by 2 inch regulator and vault, and abandon 1042 ft of 8-inch main
Rationale: Plans/Studies & Specifics	The existing 8-inch main has had 6 recorded leaks with 4 occurring in the last 2 years. Maintenance and Construction recommends replacement. Cast iron pipe is more brittle than ductile iron pipe and therefore is more likely to break. PWB management decided to extend replacement to other sections of a similar age.
Major changes since start:	Aug 2015: Additional pipe added to scope increased cost and schedule. Now has a new status as a major project and a new initial estimate. Aug 2016: Change of connection location increased footage and time. Project total unchanged.
Other info / Coordination:	

B. Schedule	
Initial mention:	October 2014
Initial planned comp:	January 2016
Current planned comp:	9/19/2018

C. Cost Plan	
Initial total cost est:	$866,000
FY 15-16 plan on 10/2015:	$115,000
FY 15-16 plan on 5/2016:	$63,000
Overall rate impact %:	0.062
Debt service, FY 16-17 est:	$46,815
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01880
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW Vista Ave from Spring to Laurel

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$77,686	$57,686		$20,000	$0	$0	$0	$0	$0	$0
Construction & Land	$779,000	$0		$13,000	$766,000	$0	$0	$0	$0	$0
Other (e.g.contingency	$9,000	$0		$0	$0	$9,000	$0	$0	$0	$0
Sum	$866,000	$57,686		$33,000	$766,000	$9,000	$0	$0	$0	$0

030 Design

Section Major Project - Continuing

W01880 SW Vista Ave from Spring St to Laurel St

SW Boones Ferry Rd at SW Arnold St Bridge

A. Scope	
Original Description / Purpose:	This project will abandon two parallel 6-inch cast iron water mains in SW Boones Ferry Rd between SW Comus Ct and SW Arnold St (approximate 800 feet). Replace with one 460-foot long 8-inch ductile iron water main, attaching the 8-inch pipe to a 125.5 foot long new bridge structure. Renew two water service lines.
Rationale: Plans/Studies & Specifics	BES will be removing the existing roadway bed crossing the existing culvert structure under the roadway, in order to construct a 125.5-foot long bridge structure in SW Boones Ferry Rd north of SW Arnold St. The two existing parallel 6-inch water mains in SW Boones Ferry Rd will be impacted by this roadway removal.
Major changes since start:	
Other info / Coordination:	BES's consultant will design the pipe on bridge structure water main and bid the water mitigation work. BES will be responsible for 67% of the cost to design and replace the existing water. The Fire Bureau has authorized cutting and plugging the two 6-inch water mains, and leaving the area with an anticipated diminished fire flow if 500 gpm for a maximum duration of nine months with the understanding that the fire hydrants at certain locations will maintain their nominal fire flow capacity.

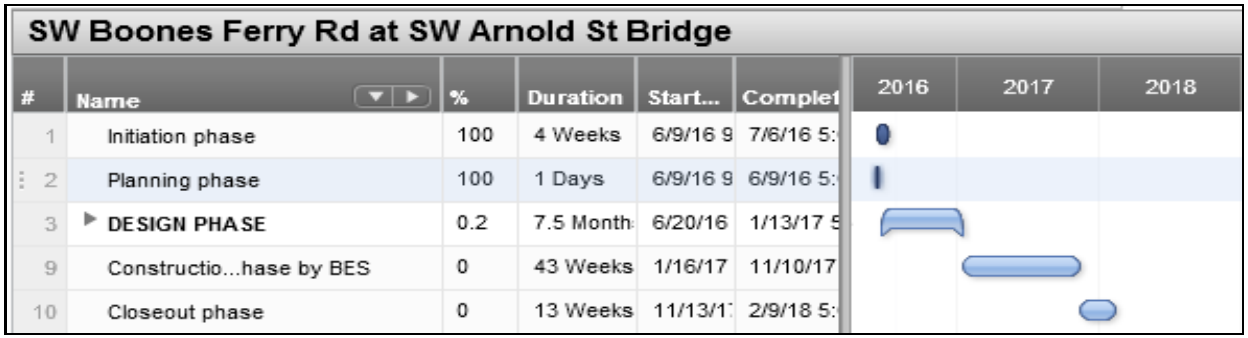
B. Schedule	
Initial mention:	June 2016
Initial planned comp:	February 2018
Current planned comp:	2/9/2018

C. Cost Plan	
Initial total cost est:	$560,000
FY 15-16 plan on 10/2015:	$0
FY 15-16 plan on 5/2016:	$5,000
Overall rate impact %:	0.040
Debt service, FY 16-17 est:	$30,273
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02073
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW Boones Ferry Rd NNL Arnold St Bridge

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$138,040	$1,040		$137,000	$0	$0	$0	$0	$0	$0
Construction & Land	$421,000	$0		$60,000	$361,000	$0	$0	$0	$0	$0
Other (e.g.contingency	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$560,000	$1,040		$197,000	$361,000	$0	$0	$0	$0	$0



030 Design

Section Major Project - New Status

W02073 SW Boones Ferry Rd at SW Arnold St Bridge

SE 20th Ave Oak St north of SE Pine St

A. Scope	
Original Description / Purpose:	This project will install approximately 80 feet of 16-inch pipe in SE Pine St, 90 feet of 8 inch pipe in SE Oak St, and 300 feet of 6 inch pipe in SE 20th Ave to replace the impacted 8-inch water main. Renew four water service lines, transfer one water service, and renew one fire hydrant.
Rationale: Plans/Studies & Specifics	BES will be installing a 24 inch sanitary sewer line 4 feet away from the existing 8-inch water main in SE 20th Ave, in violation of OAR333/340. They are trying to stay as far away from the existing 20-inch water main located on the west side of SE 20th Ave, as well as the existing sanitary sewer line which is also located on the west side of SE 20th Ave, and is supported by a wooden trestle.
Major changes since start:	
Other info / Coordination:	BES will be responsible for: 1) 24% of the cost for installing the 6-inch pipe in SE 20th Ave; 2)27% of the cost to replace the 16-inch pipe in SE Pine St to facilitate the connection to that water main, 3) 17% of the cost to replace the 8-inch pipe in SE Oak St to facilitate the connection to that water main; and 4) 100% of the cost to renew the fire hydrant. The water main work will be included in the BES Contract.

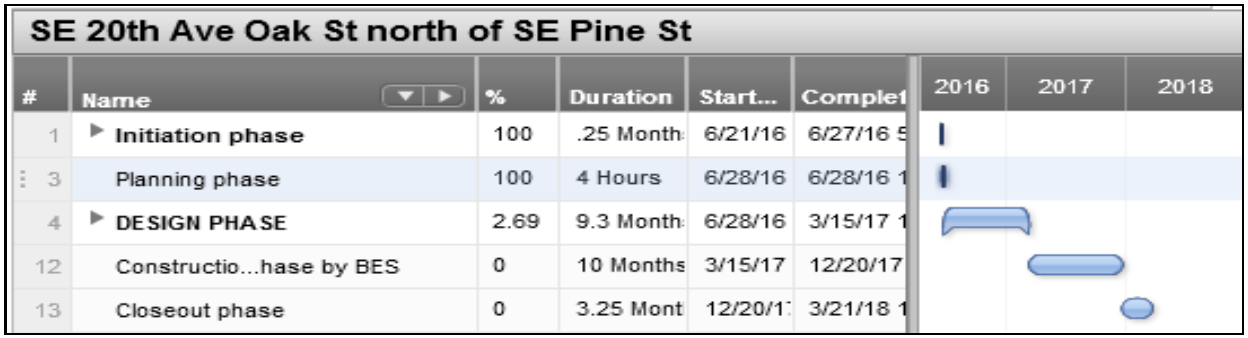
B. Schedule	
Initial mention:	June 2016
Initial planned comp:	March 2018
Current planned comp:	3/21/2018

C. Cost Plan	
Initial total cost est:	$454,000
FY 15-16 plan on 10/2015:	$0
FY 15-16 plan on 5/2016:	$4,000
Overall rate impact %:	0.032
Debt service, FY 16-17 est:	$24,543
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02077
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SE 20th Ave from Oak St to NNL Pine St

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$62,709	$2,709		$60,000	$0	$0	$0	$0	$0	$0
Construction & Land	$391,000	$0		$60,000	$331,000	$0	$0	$0	$0	$0
Other (e.g.contingency	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$454,000	$2,709		$120,000	$331,000	$0	$0	$0	$0	$0



030 Design

Section Major Project - New Status

W02077 SE 20th Ave Oak St north of SE Pine St

Interstate Facility Rehabilitation

A. Scope	
Original Description / Purpose:	The project rebuilds PWB's main maintenance facility. Master planning from 2002 – 2006 developed the baseline requirements for current and long-term needs. Recent updates to the master plan and additional program summary work has created the basis for the design of the facility now underway. Two new buildings will replace the 85-year-old Maintenance Building that currently serves as the main office and warehouse. Site improvements to the 11-acre campus improve vehicle and employee circulation and bring the property up to current code requirements for storm water management and landscaping.
Rationale: Plans/Studies & Specifics	Geotechnical studies completed in 1996 and during the master planning period showed that the Maintenance Building and a large covered parking area for fleet vehicles would most likely not survive a sizable seismic event. Building assessments also showed that the design was not conducive for remodeling to meet current program needs. Deferrals to code-required site improvements had been granted over the last 15 years as small improvements were permitted. Time extensions had been exhausted and the Bureau was at risk of being cited for violation.
Major changes since start:	8/2012: approach/scope change because project funding issues necessitated a two phased design; schedule and cost plan adjusted accordingly. 12/2012: delay caused by new City contracting process causing a cost shift into FY16-17. 3/ 2013: decontamination work sequencing caused 2-month delay but we may catch up. 3/2014: phase 2 construction was able to start earlier than planned. 8/2015: delay due to permitting of add-alternate work.
Other info / Coordination:	PWB's Maintenance/Construction and Operations programs will operate in this facility during construction. Construction phasing will allow staff to move in as sections are completed and spread costs over years. Fleet vehicles and equipment and functions will be relocated for improvements. The new facility will seek a LEED Gold certification. "Other" costs in Section E include interagency charges for permits, materials testing and miscellaneous fees.

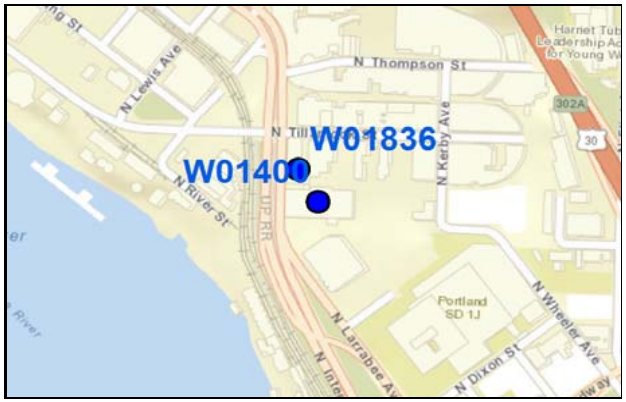
B. Schedule	
Initial mention:	6/1/2010
Initial planned comp:	12/1/2013
Current planned comp:	8/22/2016

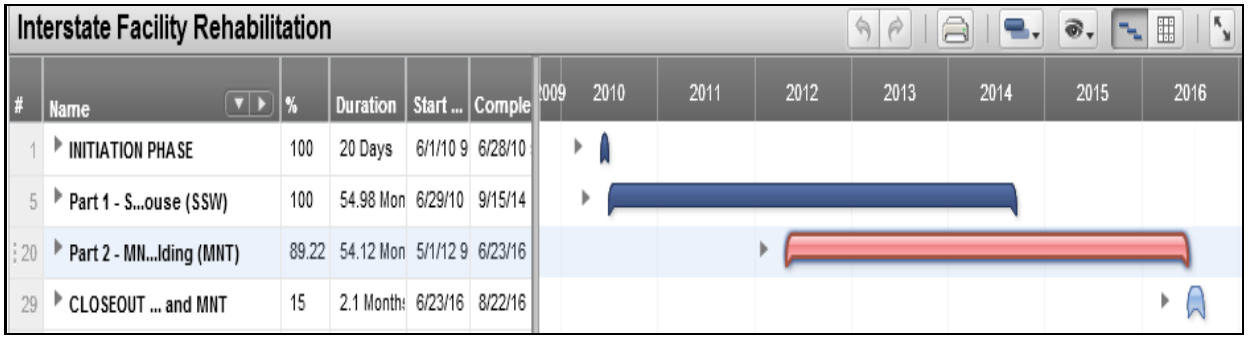
C. Cost Plan	
Initial total cost est:	$49,383,000
FY 15-16 plan on 10/2015:	$4,498,000
FY 15-16 plan on 5/2016:	$5,262,000
Overall rate impact %:	3.526
Debt service, FY 16-17 est:	$2,668,894
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01400
Program:	Distribution
Subprogram:	Field Support
Nearest Address:	1900 N. Interstate Avenue

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$86,231	$86,231		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$5,575,296	$5,575,296		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$42,545,332	$42,219,332		$326,000	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$1,162,848	$1,162,848		$0	$0	$0	$0	$0	$0	$0
Sum	$49,370,000	$49,043,707		$326,000	$0	$0	$0	$0	$0	$0





050 Closeout

Section Major Project - Complete

W01400 Interstate Facility Rehabilitation

Fulton Pump Station Improvements

A. Scope	
Original Description / Purpose:	This project will replace the 12 million gallon per day Fulton Pump Station with a new facility located in Willamette Park.
Rationale: Plans/Studies & Specifics	The 2006 Burlingame Service Area Supply Facility Master Plan recommended that the existing Fulton Pump Station be replaced or rehabilitated to mitigate the risk of an extended outage due to failure. Major studies recommending this project include the Burlingame Service Area Supply Facilities Master Plan (2006), the Distribution System Master Plan (2007), and the Fulton Pump Station Improvements Project Basis of Design Report (2007).
Major changes since start:	Cost increase: Preliminary Design concluded it was not possible to provide betterments on the existing lot without major operational risk. A new facility in Willamette Park, including land rights was needed. $545K was transferred from the PWB to Parks. 11/11: schedule delay to investigate alternative procurement. 8/12: cost increase due to design complexity. 7/13: cost and schedule increase due to design complexity. 7/14: reschedule due to permitting and electrical design, project total unchanged but costs shifted FYs. 9/14: cost shift into FY15/16. 03/15: increased contingency, staffing and higher bid than planned. 08/15: cost increase due to additional staffing, consulting and risk. 3/2016: cost shift to FY16-17.
Other info / Coordination:	Electricity use will be reduced with this project. "Other" costs in Section E include work prior to 2009 for park permits, materials testing and miscellaneous fees.

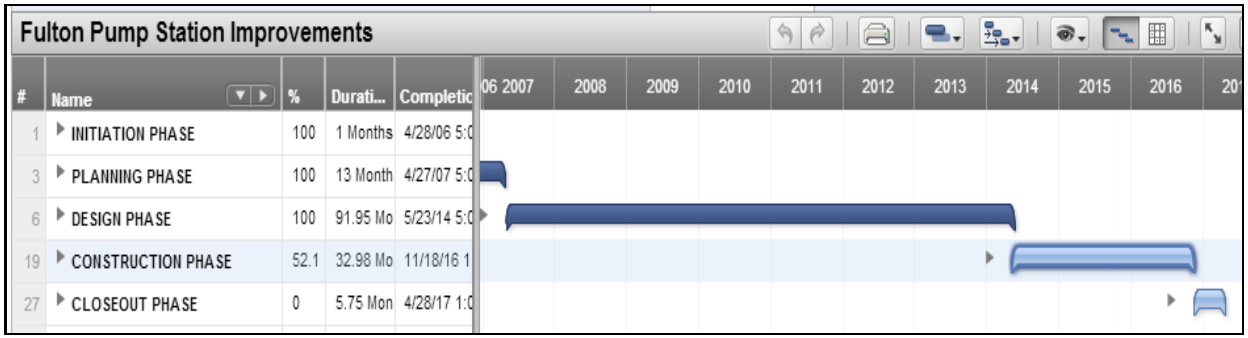
B. Schedule	
Initial mention:	4/3/2006
Initial planned comp:	5/1/2010
Current planned comp:	4/28/2017

C. Cost Plan	
Initial total cost est:	$11,647,000
FY 15-16 plan on 10/2015:	$7,730,000
FY 15-16 plan on 5/2016:	$6,870,000
Overall rate impact %:	1.287
Debt service, FY 16-17 est:	$974,306
Lifecycle cost est:	Likely decrease

D. Identification	
SAP #:	W01358
Program:	Distribution
Subprogram:	Pump Stations Tanks
Nearest Address:	Willamette Park

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$3,238,981	$3,238,981		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$14,490,878	$10,192,687		$4,298,191	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$292,744	$292,744		$0	$0	$0	$0	$0	$0	$0
Sum	$18,023,000	$13,724,412		$4,298,191	$0	$0	$0	$0	$0	$0



040 Construction Section Major Project - Continuing

W01358 Fulton Pump Station Improvements

Greenleaf Pump Station

A. Scope	
Original Description / Purpose:	This project will plan, design and construct a replacement of the Greenleaf pump station at the existing site. Flow upgrades will render Penridge tank superfluous and will be demolished in this project as well. The new pump station will pump directly to the distribution system.
Rationale: Plans/Studies & Specifics	Greenleaf Pump Station (PS) and Penridge Tank (Tank) have high risk ratings due to the need for fire flow in a residential area near Forest Park and parts of the Tank have extensive corrosion. The highest benefit and least-cost alternative was to take out the Tank and rehabilitate the PS with energy-efficient pumps for normal distribution needs and two large pumps for fire flows. Five major studies justify this project. The main study was the 2009 Greenleaf Pump Station & Penridge Service Area Basis of Design Report.
Major changes since start:	August 2014: project restarted, the scope divided into two projects. Portion of previous work retained. Aug 2016: technical adjustment in FY18-19 to maintain project total.
Other info / Coordination:	Other studies supporting this project include Evaluation of Pumping and Storage Alternatives to Meet Water Demands in the Northwest Hills Area (1987), the Northwest Hills Master Plan PCR (2006), the Northwest Hills Service Area Master Plan (2007), the Distribution System Master Plan (2007). An associated distribution mains improvement project to complete improvements for fire flow is not included in this project.

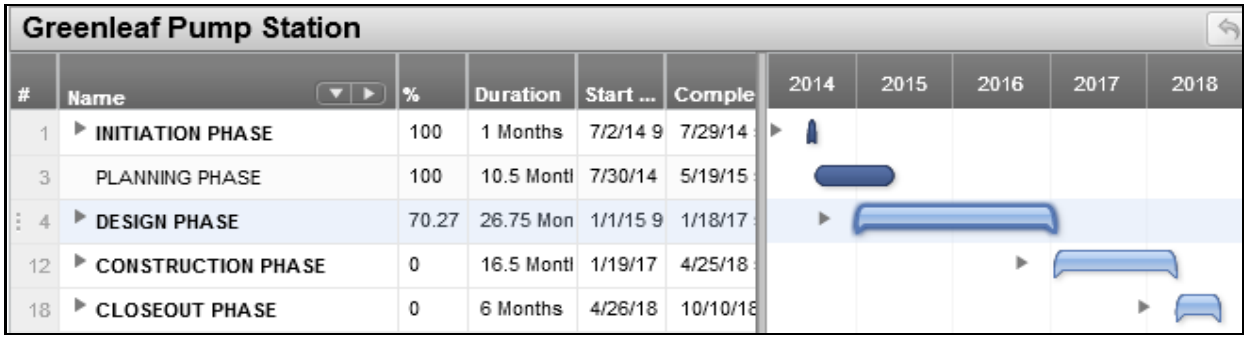
B. Schedule	
Initial mention:	July 2014
Initial planned comp:	October 2018
Current planned comp:	10/10/2018

C. Cost Plan	
Initial total cost est:	$1,710,000
FY 15-16 plan on 10/2015:	$300,000
FY 15-16 plan on 5/2016:	$300,000
Overall rate impact %:	0.122
Debt service, FY 16-17 est:	$92,441
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01446
Program:	Distribution
Subprogram:	Pump Stations Tanks
Nearest Address:	Adjacent and south of 431 NW Greenleaf Rd

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$27,325	$27,325		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$604,146	$554,146		$50,000	$0	$0	$0	$0	$0	$0
Construction & Land	$1,073,157	$157		$90,000	$983,000	$0	$0	$0	$0	$0
Other (e.g.contingency	$5,111	$4,111		$0	$0	$1,000	$0	$0	$0	$0
Sum	$1,710,000	$585,739		$140,000	$983,000	$1,000	$0	$0	$0	$0



030 Design

Section Major Project - Continuing

W01446 Greenleaf Pump Station

Tabor PS Improvements

A. Scope	
Original Description / Purpose:	This project will install one permanent 300 kilowatt engine drive generator to power the entire pump station electrical demand. Add a new RTU.
Rationale: Plans/Studies & Specifics	The Tabor 590 Service Area was classified as being deficient for one or more screening service goals, specifically fire, storage and outage. Improvements for the addition of the generator were recommended in the subsequent Tabor 590 PS Generator Technical Memorandum to address risks associated with electrical outages and prevention of potential boil water events.
Major changes since start:	7/2014: preliminary design reduced the original scope (VFD removed) and changed project approach. Reduced cost but increased duration due to land use review. 3/15: added scope, delay due to obtaining land use permits, increased cost. 3/16: delay to match schedule with Tabor Reservoir Adjustment project and increased costs due to delays.
Other info / Coordination:	Land use review is determined by the Tabor Reservoir Adjustments project W01524 and the schedule will be affected.

B. Schedule	
Initial mention:	October 2013
Initial planned comp:	September 2015
Current planned comp:	2/2/2017

C. Cost Plan	
Initial total cost est:	$550,000
FY 15-16 plan on 10/2015:	$5,000
FY 15-16 plan on 5/2016:	$74,000
Overall rate impact %:	0.029
Debt service, FY 16-17 est:	$22,002
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01757
Program:	Distribution
Subprogram:	Pump Stations Tanks
Nearest Address:	Mt. Tabor Reservoir

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$204,257	$204,257		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$202,471	$70,471		$132,000	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$407,000	$274,728		$132,000	$0	$0	$0	$0	$0	$0

040 Construction Section Major Project - Continuing

W01757 Tabor PS Improvements

Council Crest Tank Roof Replacement

A. Scope	
Original Description / Purpose:	This project will replace the Council Crest Tank roof and upper wall shell.
Rationale: Plans/Studies & Specifics	•Council Crest Tank is the highest-elevation tank in SW Portland serving about 1,300 customers. Currently, the tank does not have any backup gravity supplies and the roof has extensive corrosion. Roof failure from earthquake, ice or wind storm would mean a long-term Boil Water Notice and nightly water outages. The reactive repair costs would be higher than planned costs, and the temporary loss of the tank would put operational pressure on other parts of the system. The benefit-cost analysis showed the roof replacement was the least risk cost of any alternative.
Major changes since start:	March 2016: design delay, additional work to test for contamination and more detailed estimating added cost.
Other info / Coordination:	A proposed 8-inch bypass, which is a part of the Portland Heights Pump Main Bypass project, must be installed and tested prior to initiating the rehabilitation of the Council Crest Tank roof. The 8-inch bypass allows excess flows from the PHPS to be recycled into the PHT when the PHPS is pumping without the Council Crest Tank.

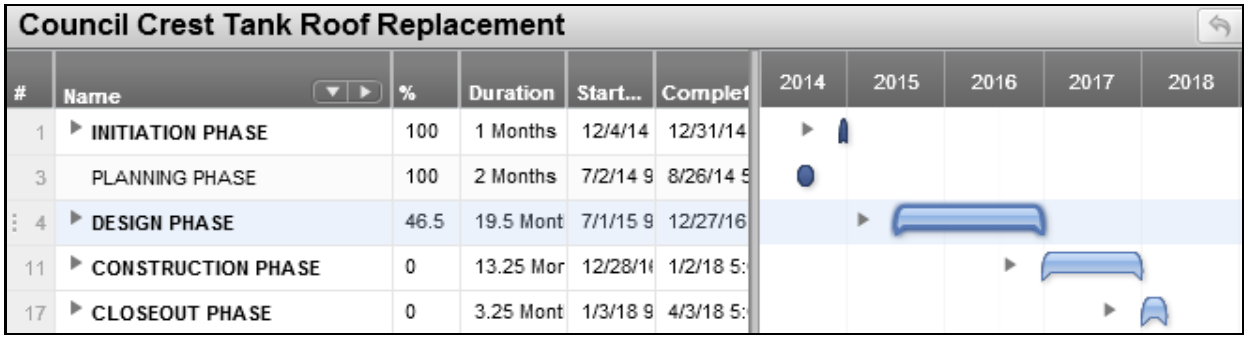
B. Schedule	
Initial mention:	July 2014
Initial planned comp:	May 2018
Current planned comp:	4/3/2018

C. Cost Plan	
Initial total cost est:	$700,000
FY 15-16 plan on 10/2015:	$95,000
FY 15-16 plan on 5/2016:	$150,000
Overall rate impact %:	0.061
Debt service, FY 16-17 est:	$45,950
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01848
Program:	Distribution
Subprogram:	Pump Stations Tanks
Nearest Address:	3445 SW Council Crest Drive

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

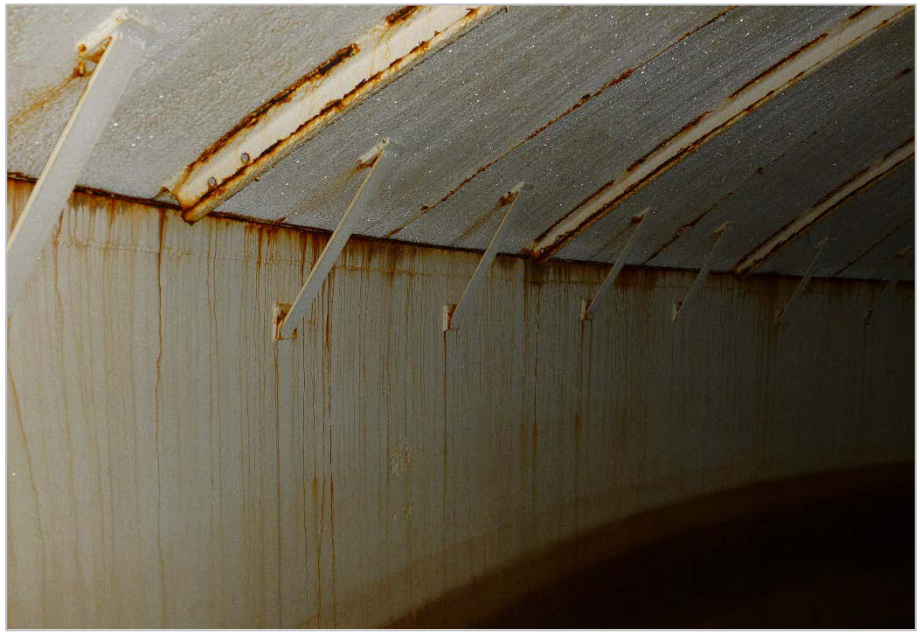
	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$187,396	$144,396		$43,000	$0	$0	$0	$0	$0	$0
Construction & Land	$662,000	$0		$160,000	$502,000	$0	$0	$0	$0	$0
Other (e.g.contingency	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$850,000	$144,396		$203,000	$502,000	$0	$0	$0	$0	$0



030 Design

Section Major Project - Continuing

W01848 Council Crest Tank Roof Replacement



CANCELLED Verde Vista PS Improvements

A. Scope	
Original Description / Purpose:	This project will upgrade the Verde Vista Pump Station so that it can supply both the Pittock and Calvary Tanks. Improvements to the pump station include two additional pumps and corresponding electrical upgrades. A 12-inch discharge pump main will also be installed between the Verde Vista Pump Station and W Burnside Road. This will connect to the new 12-inch or 16-inch pump main that will be constructed as part of the Burnside Pump Main project.
Rationale: Plans/Studies & Specifics	The project is recommended per the 2006 DSMP, 2007 NW Hills Service Area Master Plan, and detailed in the 2011 Burnside Pump Station Basis of Design Report by PWB Planning. This project increases system reliability to the NW Hills of Portland, by providing the capacity to meet future peak day demands for the Northwest Hills Service Area when Hoyt PS supply is out of service. This project will allow decommissioning of the existing Burnside pump station.
Major changes since start:	Aug 2015: delay 1 year to reevaluate business case. July 2016: project cancelled; no longer needed after further analysis.
Other info / Coordination:	The project will coordinate with the Burnside Pump Main project.

B. Schedule	
Initial mention:	September 2014
Initial planned comp:	May 2019
Current planned comp:	7/20/2015

C. Cost Plan	
Initial total cost est:	$1,040,000
FY 15-16 plan on 10/2015:	$65,000
FY 15-16 plan on 5/2016:	$10,000
Overall rate impact %:	0.001
Debt service, FY 16-17 est:	$0
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01883
Program:	Distribution
Subprogram:	Pump Stations Tanks
Nearest Address:	3601 NW VERDE VISTA TER

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$7,427	$7,427		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$0	$0		$0	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$8,000	$7,427		$0	$0	$0	$0	$0	$0	$0

059 Cancelled

Section Major Project - New Status

W01883 CANCELLED Verde Vista PS Improvements

Water Quality Lab Remodel

A. Scope	
Original Description / Purpose:	The project will create an in-house laboratory section within the existing Water Quality Laboratory at Interstate to support the requirements of the Bull Run Treatment Variance.
Rationale: Plans/Studies & Specifics	In 2012, the State of Oregon granted PWB a variance to the Long Term 2 Enhanced Surface Water Treatment (LT2) Rule for the Bull Run source water. One of the variance conditions requires PWB to monitor for Cryptosporidium. We have been shipping water samples to accredited private contract laboratories--of which only a handful exist. This weekly arrangement has become challenging and there is a projected decline in the commercial Cryptosporidium lab industry. Consequently, PWB must secure its own in-house capabilities and expertise to ensure ongoing LT2 compliance.
Major changes since start:	June 2016: revised schedule. Project stayed at 450K.
Other info / Coordination:	

B. Schedule	
Initial mention:	December 2015
Initial planned comp:	April 2017
Current planned comp:	9/6/2017

C. Cost Plan	
Initial total cost est:	$450,000
FY 15-16 plan on 10/2015:	$0
FY 15-16 plan on 5/2016:	$23,000
Overall rate impact %:	0.032
Debt service, FY 16-17 est:	$24,327
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01836
Program:	Regulatory Compliance
Subprogram:	Water Quality Regulatory Compliance
Nearest Address:	2010 N Interstate

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$320	$320		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$91,068	$26,068		$65,000	$0	$0	$0	$0	$0	$0
Construction & Land	$353,066	$1,066		$352,000	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$5,000	$0		$0	$5,000	$0	$0	$0	$0	$0
Sum	$450,000	$27,454		$417,000	$5,000	$0	$0	$0	$0	$0

030 Design

Section Major Project - Continuing

W01836 Water Quality Lab Remodel

Road 1010 MP 8.75 - 9.2

A. Scope	
Original Description / Purpose:	This project will grind existing pavement, restore degraded road subgrade, pave and stripe .45 mile of Road 1010. Approximately two culverts will be replaced with Aluminum Alloy Pipe.
Rationale: Plans/Studies & Specifics	This segment of road 1010 provides access to a helicopter emergency landing zone and tertiary emergency access from the Bull Run Watershed. It is regularly used by PWB staff in monitoring efforts for the LT2 variance. This segment is in Very Poor condition and is considered in asset failure. This project is recommended by the Bull Run Roads Asset Management Plan (Aug 2012), and the Bull Run Watershed Road Repair Project Selection for fiscal years 2014-2018.
Major changes since start:	Funding is assigned from the program budget. June 2015: Bids higher than expected so costs increased. This is now a new status as a major project with a new initial estimate. 3/2016: cost increase due to additional excavation, fill and paving.
Other info / Coordination:	

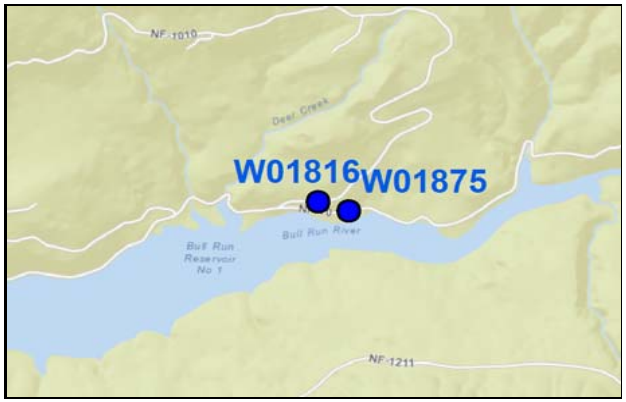
B. Schedule	
Initial mention:	May 2014
Initial planned comp:	January 2015
Current planned comp:	12/18/2015

C. Cost Plan	
Initial total cost est:	$502,000
FY 15-16 plan on 10/2015:	$300,000
FY 15-16 plan on 5/2016:	$540,000
Overall rate impact %:	0.043
Debt service, FY 16-17 est:	$32,706
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01816
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Bull Run Watershed

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$62,874	$62,874		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$536,107	$536,107		$0	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$5,920	$5,920		$0	$0	$0	$0	$0	$0	$0
Sum	$605,000	$604,901		$0	$0	$0	$0	$0	$0	$0



055 Closeout Warranty

Section Major Project - Complete

W01816 Road 1010 MP 8.75-9.2

Road 10 MP 4.6 - 6.2

A. Scope	
Original Description / Purpose:	This project will grind existing pavement, restore road subgrade, pave, and stripe 2 miles of Road 10. The road will be brought up to current standards for width using fill and walls to add an average of two feet of width to the segment. Approximately six culverts will be replaced with Aluminum Alloy Pipe.
Rationale: Plans/Studies & Specifics	This segment of Road 10 is part of the primary access to Headworks facility. It provides access from Headworks to secondary egress from the watershed, should the main route be blocked. This primary road is at the low end of Poor conditions and the road width does not meet the current design standard for this Class A road. This project is recommended by the 2012 Bull Run Roads Asset Management Plan and the Bull Run Watershed Road Repair Project Selection for fiscal years '14-'18.
Major changes since start:	Nov 2014: Fall Budget change as a new Major project. March 2016: delay in design phase to combine with another project..
Other info / Coordination:	

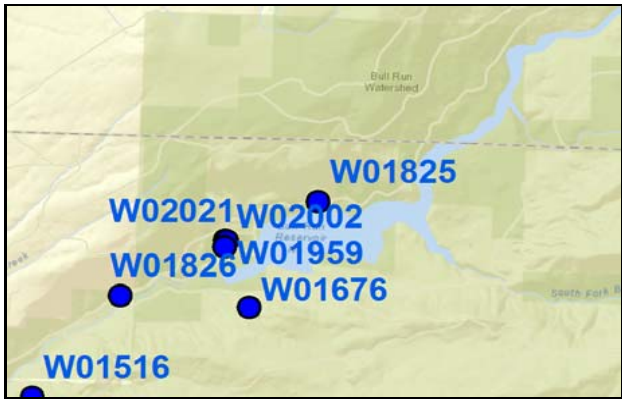
B. Schedule	
Initial mention:	May 2014
Initial planned comp:	December 2016
Current planned comp:	12/22/2016

C. Cost Plan	
Initial total cost est:	$1,280,000
FY 15-16 plan on 10/2015:	$371,000
FY 15-16 plan on 5/2016:	$158,000
Overall rate impact %:	0.091
Debt service, FY 16-17 est:	$69,196
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01825
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Bull Run Watershed

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)	FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$173,452	$168,452	$5,000	$0	$0	$0	$0	$0	$0
Construction & Land	$1,098,675	$9,675	$1,089,000	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$6,988	$6,988	$0	$0	$0	$0	$0	$0	$0
Sum	$1,280,000	$185,115	$1,094,000	$0	$0	$0	$0	$0	$0



040 Construction

Section Major Project - Continuing

W01825 Road 10 MP 4.6 - 6.2

Road 10 MP 3.0 - 4.6

A. Scope	
Original Description / Purpose:	This project will grind existing pavement, restore road subgrade, pave, and stripe 1.6 miles of Road 10. The road will be brought up to current standards for width using fill and walls to add an average of three feet of width to the segment. Approximately nine culverts will be replaced with Aluminum Alloy Pipe.
Rationale: Plans/Studies & Specifics	This segment of Road 10 is part of the primary access road to the bureau's Headworks facility. It is used regularly by heavy vehicles delivering supplies and daily by PWB staff reporting to work. This primary road is in Poor condition and the road width does not meet the current design standard for this Class A road. This project is recommended by the 2012 Bull Run Roads Asset Management Plan and the Bull Run Watershed Road Repair Project Selection for fiscal years '14-'18.
Major changes since start:	Nov 2014: Fall Budget change as a new Major project. June 2015: Bids higher than expected so costs increased. Aug 2015: project timing being replanned for more favorable weather window. Technical adjustment in FY16-17 to maintain project total.
Other info / Coordination:	This project is adjacent to another road segment scheduled for work the previous FY. The nature of the work is similar; however treating these as separate projects allows us to more efficiently focus our design efforts and to provide more clarity moving forward regarding the project limits. These projects are delineated to correspond to previously defined road segments used in the evaluation of the road condition.

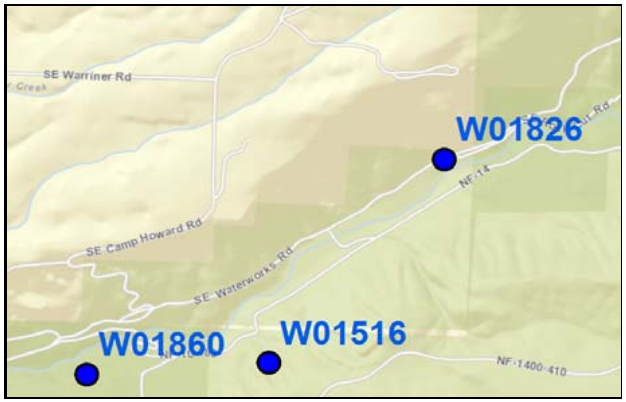
B. Schedule	
Initial mention:	May 2014
Initial planned comp:	February 2016
Current planned comp:	11/22/2016

C. Cost Plan	
Initial total cost est:	$1,120,000
FY 15-16 plan on 10/2015:	$960,000
FY 15-16 plan on 5/2016:	$44,000
Overall rate impact %:	0.096
Debt service, FY 16-17 est:	$72,763
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01826
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Segment 10C on Road 10 in the watershed

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$185,139	$185,139		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$1,158,979	$9,979		$1,149,000	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$1,050	$1,050		$0	$0	$0	$0	$0	$0	$0
Sum	$1,346,000	$196,168		$1,149,000	$0	$0	$0	$0	$0	$0



040 Construction

Section Major Project - Continuing

W01826 Road 10 MP 3.0 - 4.6

Road 10R MP 28.77 - 31.85

A. Scope	
Original Description / Purpose:	This project will grind existing pavement, restore road subgrade, reconstruct turnouts, pave, and stripe 3.08 miles of Road 10. The road condition assessment indicates the average width of this road meets the design standard, however isolated widening may be required. Current condition ratings indicate one culvert will be replaced with Aluminum Alloy Pipe. Culvert inspection during design may indicate the need to replace more.
Rationale: Plans/Studies & Specifics	This segment of Road 10 provides access from Bull Run Lake to secondary egress from the watershed, should the main route be blocked. This segment is also an important piece of the tour route. This secondary road is at the low end of Fair condition, a remaining service life of approximately 5 years. The road meets the design width for this Class B segment however several failures have occurred in turnouts designed to accommodate passing vehicles. This project is recommended by the 2012 Bull Run Roads Asset Management Plan.
Major changes since start:	Aug 2016: transferred FY15-16 underspending to FY18-19.
Other info / Coordination:	

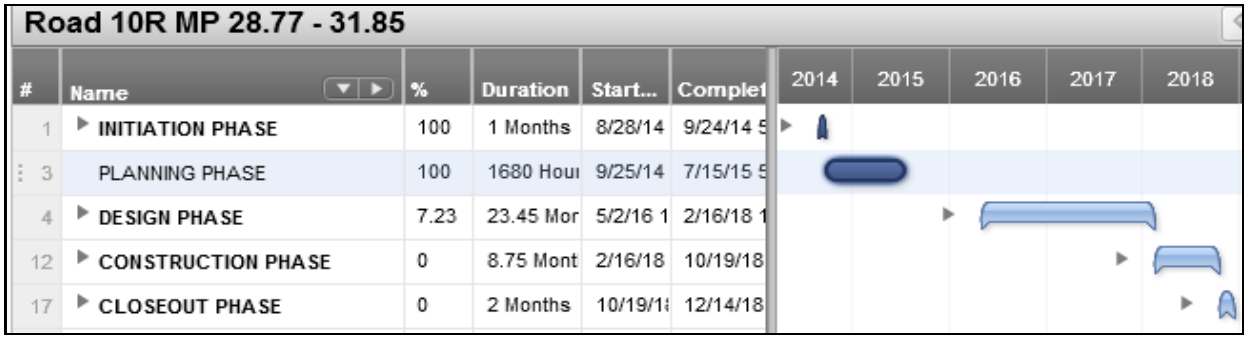
B. Schedule	
Initial mention:	August 2014
Initial planned comp:	January 2019
Current planned comp:	12/14/2018

C. Cost Plan	
Initial total cost est:	$2,100,000
FY 15-16 plan on 10/2015:	$60,000
FY 15-16 plan on 5/2016:	$60,000
Overall rate impact %:	0.150
Debt service, FY 16-17 est:	$113,524
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01874
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Road 10 in the watershed

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)	FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$202,062	$2,062	$200,000	$0	$0	$0	$0	$0	$0
Construction & Land	$1,897,000	$0	$0	$740,000	$1,157,000	$0	$0	$0	$0
Other (e.g.contingency	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sum	$2,100,000	$2,062	$200,000	$740,000	$1,157,000	$0	$0	$0	$0



030 Design

Section Major Project - Continuing

W01874 Road 10R MP 28.77-31.85

Road 10H MP 10.95 - 12.56

A. Scope	
Original Description / Purpose:	This project will grind existing pavement, restore road subgrade, pave, and stripe 1.61 miles of Road 10. The road condition assessment indicates the average width of this road meets the design standard, however isolated widening may be required. Current condition ratings indicate one culvert will be replaced with Aluminum Alloy Pipe. Culvert inspection during design may indicate a need to replace more.
Rationale: Plans/Studies & Specifics	This segment of Road 10 provides access from Headworks to secondary egress from the watershed, should the main route be blocked. This secondary road is at the low end of Fair and the road width does not meet the current design standard for this Class A road. This project is recommended by the 2012 Bull Run Roads Asset Management Plan.
Major changes since start:	12/2015: cost increase and schedule delay due to construction environment and weather considerations.
Other info / Coordination:	

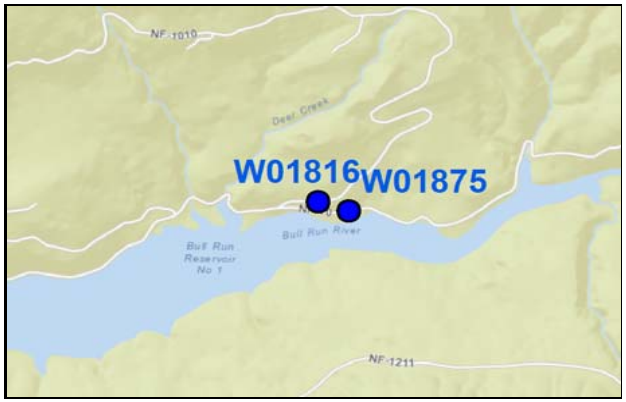
B. Schedule	
Initial mention:	August 2014
Initial planned comp:	December 2017
Current planned comp:	12/15/2017

C. Cost Plan	
Initial total cost est:	$822,000
FY 15-16 plan on 10/2015:	$117,000
FY 15-16 plan on 5/2016:	$71,000
Overall rate impact %:	0.089
Debt service, FY 16-17 est:	$67,574
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01875
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Road 10 in the watershed

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)	FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$132,436	$35,436	$97,000	$0	$0	$0	$0	$0	$0
Construction & Land	$1,110,000	$0	$64,000	$1,046,000	$0	$0	$0	$0	$0
Other (e.g.contingency	$6,988	$6,988	$0	$0	$0	$0	$0	$0	$0
Sum	$1,250,000	$42,424	$161,000	$1,046,000	$0	$0	$0	$0	$0



030 Design

Section Major Project - Continuing

W01875 Road 10H MP 10.95-12.56

Microwave Communications System

A. Scope	
Original Description / Purpose:	This project will replace existing microwave communications equipment on 7 towers and facilities throughout the system with new equipment.
Rationale: Plans/Studies & Specifics	The PWB microwave equipment is obsolete and parts are no longer available from the manufacturer. In addition, BTS recommends changing the system in the Watershed from passive to active, which will increase the reliability and bandwidth. In the past year, there have been two equipment failures on the Council Crest tower, which have shut down the SCADA system and resulted in data loss. The microwave system is used by the 800 MHz radio system, the SCADA system, and for some VOIP and data transmissions.
Major changes since start:	
Other info / Coordination:	This project will be done for the Water Bureau by BTS under an MOU. PWB will own the equipment while BTS will install and maintain it.

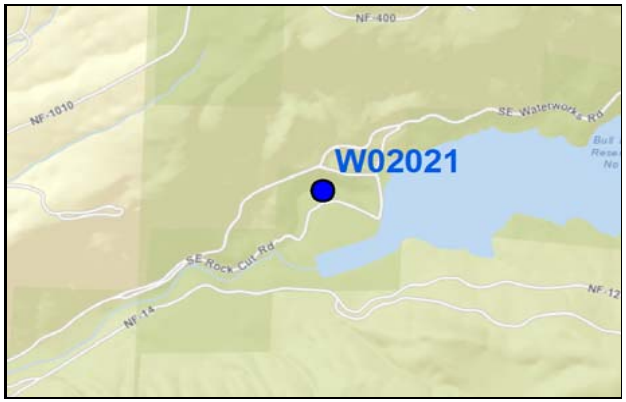
B. Schedule	
Initial mention:	October 2015
Initial planned comp:	June 2018
Current planned comp:	10/2/2018

C. Cost Plan	
Initial total cost est:	$2,214,000
FY 15-16 plan on 10/2015:	$0
FY 15-16 plan on 5/2016:	$70,000
Overall rate impact %:	0.157
Debt service, FY 16-17 est:	$118,930
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02021
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Various locations

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$55,293	$55,293		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$2,158,000	$0		$518,000	$1,640,000	$0	$0	$0	$0	$0
Other (e.g.contingency	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$2,214,000	$55,293		$518,000	$1,640,000	$0	$0	$0	$0	$0



040 Construction

Section Major Project - Continuing

W02021 Microwave Communications System

Groundwater Electrical Supply Improvements

A. Scope	
Original Description / Purpose:	This project designs and constructs a new high voltage transformer and other components to complete a double-ended electrical substation at the Groundwater Pump Station. It will also design and construct a new main breaker replacement and purchase selected spare components. March 2016 reduced scope: design and construct the replacement of main power transformer; the main medium-voltage circuit breaker and other key components.
Rationale: Plans/Studies & Specifics	The 2000 PWB System Vulnerability Analysis and later reports identified a vulnerability for electrical failures. The risk cost of a transformer failure is mainly due to the time needed for transformer replacement. The 2009 "Portland Water Bureau Groundwater Pump Station 115kV/4160V Electrical Systems Vulnerability Reduction," proposed 3 alternatives. The benefit cost ratio on this project is over 1.1. Other major studies are the 2008 Groundwater Vulnerability to Flooding and Electrical Outages Project Concept Report and the 2008 Suggestions for Additional GW Vulnerability Reduction Assessment.
Major changes since start:	April 2011: construction pushed out to 2014-15 and to be authorized later. Sept 2012: design is moving faster than planned in FY12-13. Aug 2014: design delays increased cost. March 2015: storm water drainage permitting difficulties increased cost and delayed project. March 2016: replanned project to reduce cost but delayed construction.
Other info / Coordination:	

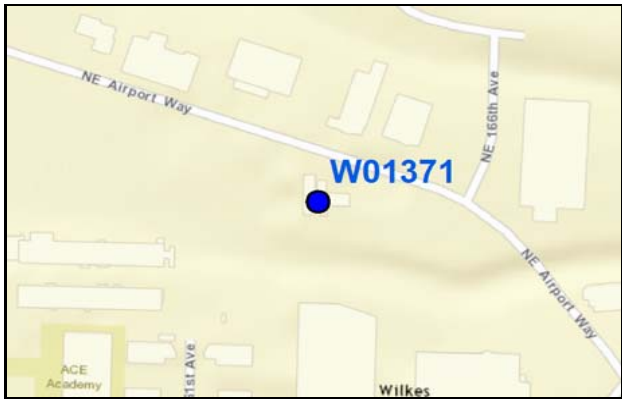
B. Schedule	
Initial mention:	9/1/2009
Initial planned comp:	June 2015
Current planned comp:	5/24/2018

C. Cost Plan	
Initial total cost est:	$2,200,000
FY 15-16 plan on 10/2015:	$1,670,000
FY 15-16 plan on 5/2016:	$124,000
Overall rate impact %:	0.088
Debt service, FY 16-17 est:	$66,222
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01371
Program:	Supply
Subprogram:	Groundwater
Nearest Address:	NE Airport Way & NE 166th Ave

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$3,110	$3,110		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$474,795	$474,795		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$747,000	$0		$200,000	$547,000	$0	$0	$0	$0	$0
Other (e.g.contingency	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$1,225,000	$477,905		$200,000	$547,000	$0	$0	$0	$0	$0



030 Design

Section Major Project - Continuing

W01371 Groundwater Electrical Supply Improvements

Rockwood PUD Meter Vault

A. Scope	
Original Description / Purpose:	This project will design and construct a replacement meter vault. The new vault will be at the parking lane/ sidewalk area and contain a check valve. We also need piping to reconnect the supply main to the distribution main. Relocate electrical RTU cabinet per Gresham request.
Rationale: Plans/Studies & Specifics	A CLEM analysis completed in 2010 rated this project as being a "high risk" due to safety issues. Vault housing a wholesale meter with instrumentation is located in a high-traffic zone that requires the closure of multiple lanes to access. Due to width and height restrictions, the business case identifies risk exposure for injury to staff working in vault is high. Vault is old, nearing the end of useful life. Asset Management Plan recommended relocation out of traffic lanes to reduce risk.
Major changes since start:	A change management was approved on April 2011. Project was then re-assigned and put on hold until till funds became available. April 2014: project restarted. Aug 2014: project replanned with new schedule and cost estimate. Nov 2014: Fall Budget change as a new Major project. Aug 2015: schedule change due to scope change requested by City of Gresham. March 2016: delay due to easements related to new Gresham request.
Other info / Coordination:	

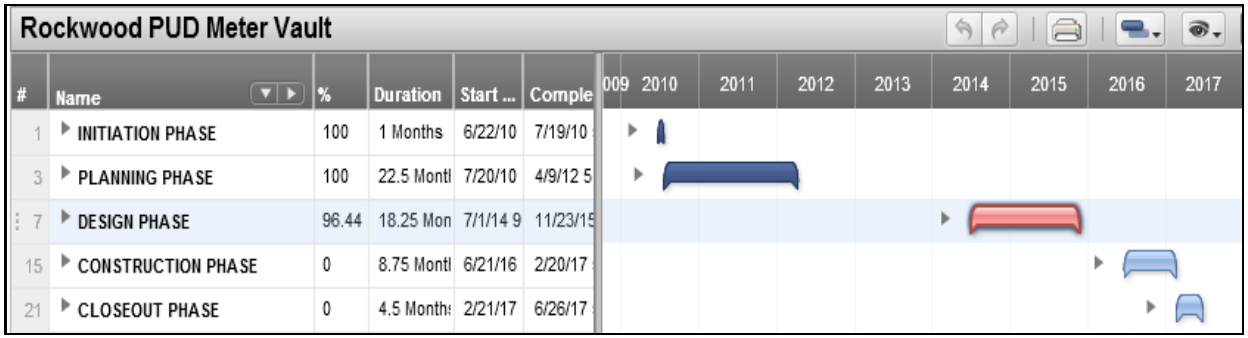
B. Schedule	
Initial mention:	6/22/2010
Initial planned comp:	October 2013
Current planned comp:	6/26/2017

C. Cost Plan	
Initial total cost est:	$530,000
FY 15-16 plan on 10/2015:	$400,000
FY 15-16 plan on 5/2016:	$46,000
Overall rate impact %:	0.038
Debt service, FY 16-17 est:	$28,651
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01489
Program:	Transmission & Terminal Storage
Subprogram:	Conduits Transmission Mains
Nearest Address:	SE 182nd Ave & SE Division St

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$120,652	$120,652		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$408,745	$10,745		$398,000	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$530,000	$131,397		$398,000	$0	$0	$0	$0	$0	$0



030 Design

Section Major Project - Continuing

W01489 Rockwood PUD Meter Vault

Sellwood Bridge Betterments

A. Scope	
Original Description / Purpose:	This project will install a new vault with two pressure reducing valves, includes SCADA cabinet and controls. Extend SCADA controls to new flow meter (flow meter not a betterment). Install 206 linear feet of 16 inch DI pipe with 65 linear feet in a 30 inch steel casing under track ROW. Install 36 inch butterfly valve and bypass meter to perform future routine leak detection on Sellwood River Crossing.
Rationale: Plans/Studies & Specifics	This project will improve supply to Palatine Hills Water District, allow for other system improvements. SCADA equipment will provide timely information on flow through Sellwood transmission line. Valve and small diameter meter will provide equipment for performing leak detection on Sellwood crossing.
Major changes since start:	Mar 2014: delay by contractor and small increase in cost. Sept 2014: new scope and increased design complexity resulted in cost increase and delay. Nov 2014: Fall Budget change as a new Major project. Mar 2015: 36 inch valve cost less and less staffing than estimated. June 2015: delay into FY 2015-16 for reimbursements from Multnomah County.
Other info / Coordination:	This work is a betterment to be paid for by PWB. County will provide design of betterments. Other work associated with Sellwood Bridge Project to be reimbursed by Multnomah County. Contract work through Multnomah County bridge contract.

B. Schedule	
Initial mention:	June 2013
Initial planned comp:	January 2015
Current planned comp:	2/5/2016

C. Cost Plan	
Initial total cost est:	$980,000
FY 15-16 plan on 10/2015:	$5,000
FY 15-16 plan on 5/2016:	$510,000
Overall rate impact %:	0.045
Debt service, FY 16-17 est:	$34,273
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01724
Program:	Transmission & Terminal Storage
Subprogram:	Conduits Transmission Mains
Nearest Address:	West end of Sellwood Bridge

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$35,589	$35,589		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$598,149	$598,149		$0	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$634,000	$633,738		$0	$0	$0	$0	$0	$0	$0

055 Closeout Warranty Section Major Project - Complete

W01724 Sellwood Bridge Betterments

Gresham Conduit 2 Trestle Upgrades

A. Scope	
Original Description / Purpose:	This project will install 13 ring girders and scour protection on both the El Camino and Beaver Creek trestles.
Rationale: Plans/Studies & Specifics	This project is justified by the business case analysis completed as part of the 2015 Conduits Rehabilitation Plan. This project mitigates Conduit 2 failure risks due to seismic and flooding events which will improve PWB's supply resiliency due to natural disasters. The benefit cost ratio for the El Camino upgrades is 8.04 and the benefit cost ratio for the Beaver Creek upgrades is 6.25.
Major changes since start:	
Other info / Coordination:	Ring girder installation is not common to PWB projects and cost contingency reflects our lack of experience. The known schedule risks include easements taking longer to procure, 404 permits, and timing of council approval. These risks could result in a one year due to in water work window constraints. Project will also need to coordinate with upcoming Conduit 2 condition assessment.

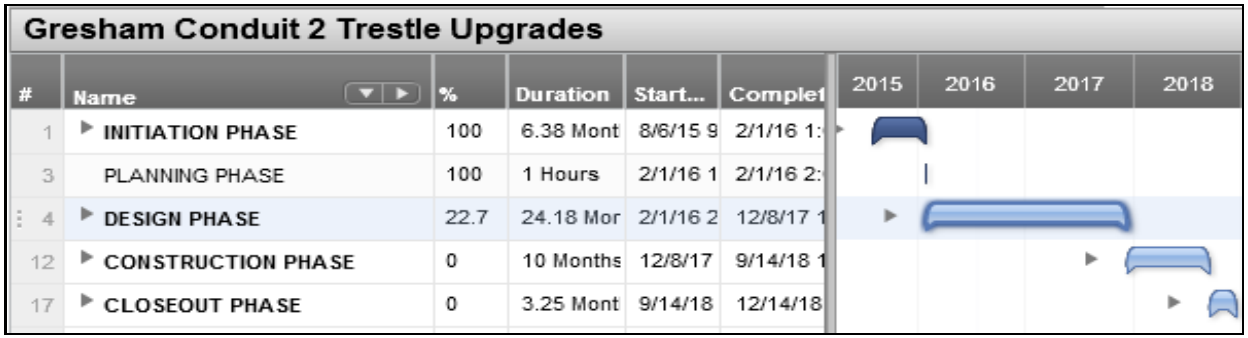
B. Schedule	
Initial mention:	August 2015
Initial planned comp:	December 2018
Current planned comp:	12/14/2018

C. Cost Plan	
Initial total cost est:	$1,150,000
FY 15-16 plan on 10/2015:	$0
FY 15-16 plan on 5/2016:	$15,000
Overall rate impact %:	0.082
Debt service, FY 16-17 est:	$62,168
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02006
Program:	Transmission & Terminal Storage
Subprogram:	Conduits Transmission Mains
Nearest Address:	Conduit 2's El Camino and Beaver Creek trestles

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)	FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$421,997	$11,997	$250,000	$160,000	$0	$0	$0	$0	$0
Construction & Land	$728,000	$0	$0	$495,000	$233,000	$0	$0	$0	$0
Other (e.g.contingency	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sum	$1,150,000	$11,997	$250,000	$655,000	$233,000	$0	$0	$0	$0



030 Design

Section Major Project - Continuing

W02006 Gresham Conduit 2 Trestle Upgrades

Conduit 3 Internal Inspection

A. Scope	
Original Description / Purpose:	Investigate approximately 8 total miles of smaller sections of Conduit 3 that are located in highly vulnerable areas; record findings from the investigation; identify limits of damaged sections; and prepare reports that recommend strategies for addressing the defects found from the investigation
Rationale: Plans/Studies & Specifics	The proposed Conduit 3 Internal Inspection Project is one of several projects that resulted from the Conduit Rehabilitation Plan published by PWB in January 2015. One of the recommendations that requires immediate follow up is a detailed investigation of the condition of the three conduits in areas that are known to have prior repairs due to leaks, landslide potential and corrosive soil properties. To maintain the integrity of the conduit, PWB will use the findings from this project to identify and prioritize capital improvement projects that address site specific issues.
Major changes since start:	
Other info / Coordination:	No map for this project.

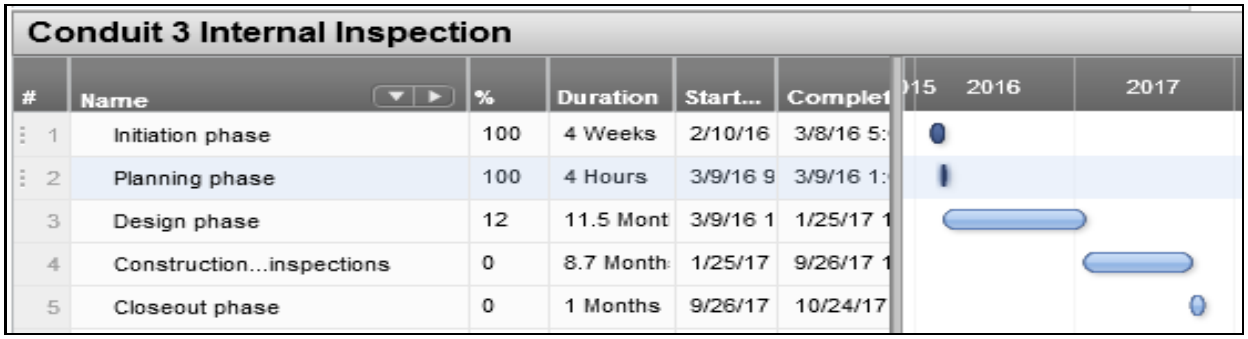
B. Schedule	
Initial mention:	February 2016
Initial planned comp:	September 2017
Current planned comp:	10/24/2017

C. Cost Plan	
Initial total cost est:	$1,030,000
FY 15-16 plan on 10/2015:	$0
FY 15-16 plan on 5/2016:	$130,000
Overall rate impact %:	0.074
Debt service, FY 16-17 est:	$55,681
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02057
Program:	Transmission & Terminal Storage
Subprogram:	Conduits Transmission Mains
Nearest Address:	Conduit 3

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

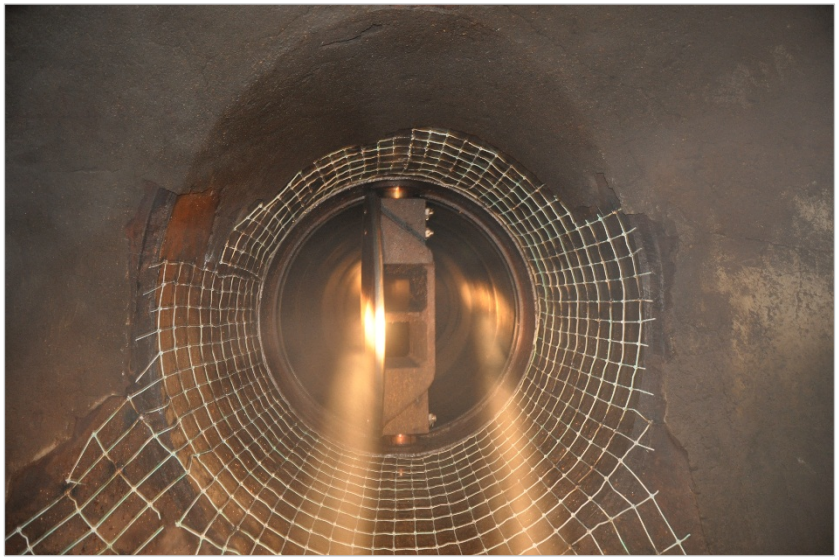
	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$280,632	$61,632		$219,000	$0	$0	$0	$0	$0	$0
Construction & Land	$749,000	$0		$688,000	$61,000	$0	$0	$0	$0	$0
Other (e.g.contingency	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$1,030,000	$61,632		$907,000	$61,000	$0	$0	$0	$0	$0



030 Design

Section Major Project - New Status

W02057 Conduit 3 Internal Inspection



Powell Butte Reservoir 2

A. Scope	
Original Description / Purpose:	This LT2 project was constructed in 2 phases. Phase 1 was completed in 2010. Phase 2 project constructed a 50-million-gallon underground reservoir at Powell Butte. It included a large-diameter pipe from Reservoir 2 to Johnson Creek, construction of a maintenance and storage facility, replacing the caretaker's house, construction of an interpretive center and restrooms, reservoir overflow, park improvements and mitigation requirements as part of the conditions for approval in the 2003 Land Use Review Type III Conditional Use Master Plan.
Rationale: Plans/Studies & Specifics	The asset management risk rating (consequence and likelihood of failure) was High. Major studies justifying this project included the Powell Butte Master Plan (1996), the System Vulnerability Assessment (2000), the Supply, Transmission, and Storage Analysis (2000), the Infrastructure Master Plan (2001), the Powell Butte Reservoir 2 Preliminary Design Report (2002), the Powell Butte Conditional Use Master Plan (2003), the Powell Butte Seismic Study Project Concept Report (2007), and the LT2 Storage Recommendations (2009).
Major changes since start:	#1, 2/10: Scope addition of three pressure sustaining vaults and deleted conduit 5 intertie on SE 174th. This reduced the project total from $138M to $130M. #2, 3/10: Adjusted schedule per consultant's proposed schedule. #3, 9/10: Scope and budget change to add Reservoir 1 roofing of $2 million – this scope canceled in 2012. #4, 4/11: Modified consulting scope to include interpretive displays. #5, 9/11: Adjusted schedule, and funding plan. #6, 9/12: adjusted funding plan to match actual expenses to-date. #7, 7/13: further reduced total and the FY13-14 amount. 8/14: schedule delay and shift in cash flow. 3/15: reduced contingency, construction to complete FY15-16. Aug 2015: cost increased due to site conditions.
Other info / Coordination:	"Other" costs included work done before 2009 as well as interagency permits, charges and fees. Initial cost estimate was $138M in the 2009 LT2 publication. That estimate was refined to $130M in 2010. All work was complete and the project closed during FY 15-16. Total project cost was $116.3 M.

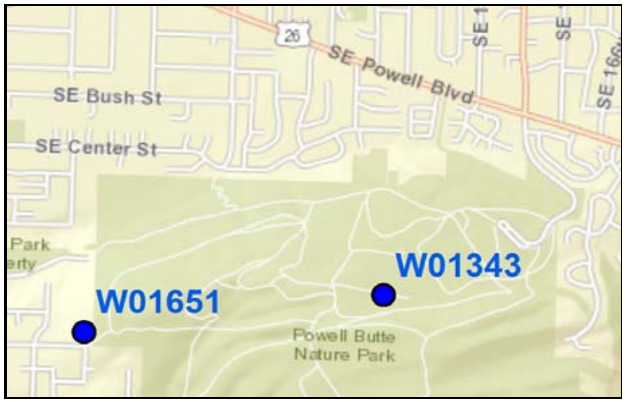
B. Schedule	
Initial mention:	7/1/2005
Initial planned comp:	12/31/2013
Current planned comp:	6/27/2016

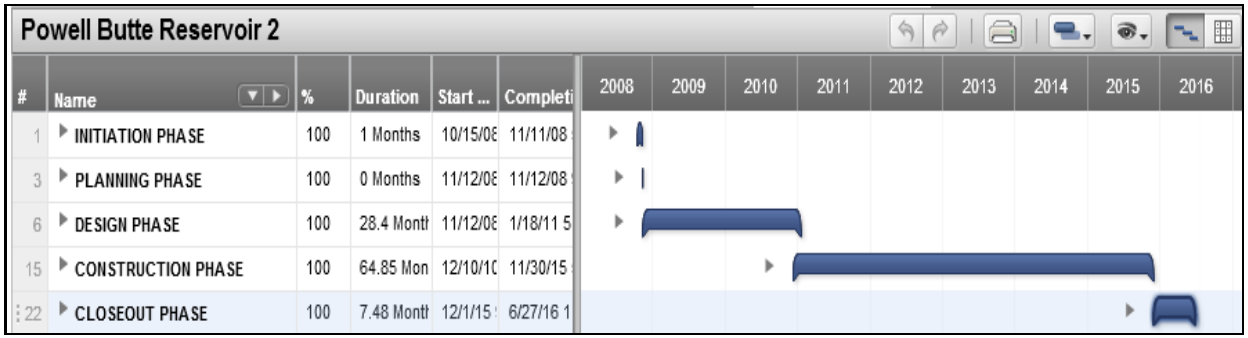
C. Cost Plan	
Initial total cost est:	$129,885,000
FY 15-16 plan on 10/2015:	$800,000
FY 15-16 plan on 5/2016:	$2,400,000
Overall rate impact %:	8.308
Debt service, FY 16-17 est:	$6,287,712
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01343
Program:	Transmission & Terminal Storage
Subprogram:	Terminal Reservoirs
Nearest Address:	Powell Butte Reservoir

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$18,089	$18,089		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$9,750,420	$9,750,420		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$104,638,763	$104,638,763		$0	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$1,904,304	$1,904,304		$0	$0	$0	$0	$0	$0	$0
Sum	$116,312,000	$116,311,576		$0	$0	$0	$0	$0	$0	$0





055 Closeout Warranty Section Major Project - Complete

W01343 Powell Butte Reservoir 2

Washington Park Reservoir 3

A. Scope	
Original Description / Purpose:	The project planned, designed and constructed a new buried reservoir to replace open Reservoir 3. This project was one solution toward compliance with LT2 replacement of the open reservoirs. It is assumed that Reservoir 4 will be used as the overflow detention, dechlorination and stormwater structure. We envision that the buried reservoir would be topped with a reflecting pond and historical features would be protected as much as possible.
Rationale: Plans/Studies & Specifics	This project is critical and is identified in the 3/27/09 EPA approved LT2 Storage Plan. Published studies include: Open Distribution Reservoir Study, April 1976; Open Reservoir Study Phase I Summary Report, January 2002 Update; and the Open Reservoir Study Phase II Planning Summary Report. According to the schedule accepted by EPA, the buried Reservoir 3 must be operational and Reservoir 4 must be disconnected by December 2020.
Major changes since start:	8/10: planning phase and procurement delayed planned completion to March 2015. 2/11: procurement delayed schedule from Mar 2016 to Mar 2017. 5/12: OHA denied PWB request for LT2 compliance delay and told PWB to meet 3/27/2009 schedule. 2012: Basis of Design Report completed, new cost estimate for Reservoir 3 only is $67M. Schedule and cost adjusted. 6/13: Increased project total due to landslide mitigation and higher contingency as well as multiyear cost plan. 3/15: cost plan shift no change in total. 8/15: cost and schedule change due to geotech, structural and historic commission. 3/16: cost change as part of finalizing design. 8/16: updated FY cost allocations.
Other info / Coordination:	This project is also known as Washington Park Reservoir Improvements. Reservoir 3 is expected to be buried with some form of reflecting pool on top which will increase long-term maintenance costs. Reservoir 4 will remain as an overflow and stormwater basin. Historical features are being preserved. Other improvements include piping revisions and site work.

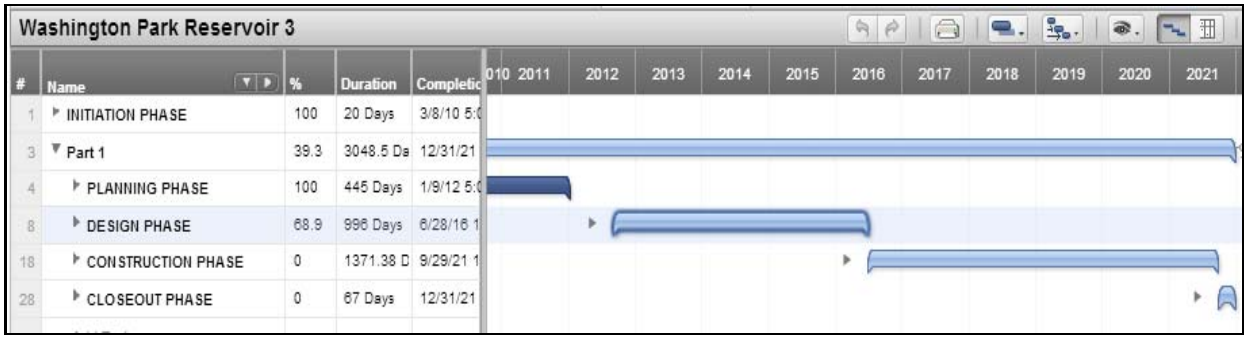
B. Schedule	
Initial mention:	3/27/2009
Initial planned comp:	December 2020
Current planned comp:	3/29/2024

C. Cost Plan	
Initial total cost est:	$61,132,686
FY 15-16 plan on 10/2015:	$4,910,000
FY 15-16 plan on 5/2016:	$7,572,000
Overall rate impact %:	13.571
Debt service, FY 16-17 est:	$10,271,213
Lifecycle cost est:	Likely increase

D. Identification	
SAP #:	W01402
Program:	Transmission & Terminal Storage
Subprogram:	Terminal Reservoirs
Nearest Address:	SW Jefferson Rd & SW Murray St

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

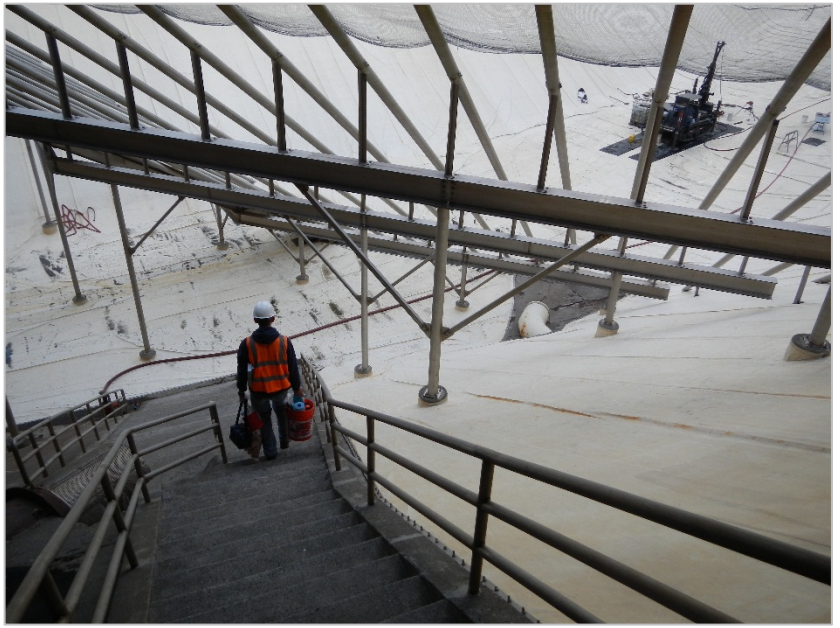
	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)	FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$785,776	$785,776	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$18,529,701	$17,829,701	$400,000	$100,000	$200,000	$0	$0	$0	$0
Construction & Land	$170,639,402	$1,171,191	$28,000,000	$54,000,000	$37,500,000	$15,100,000	$6,900,000	$12,000,000	$15,968,211
Other (e.g.contingency	$45,121	$45,121	$0	$0	$0	$0	$0	$0	$0
Sum	$190,000,000	$19,831,789	$28,400,000	$54,100,000	$37,700,000	$15,100,000	$6,900,000	$12,000,000	$15,968,211



040 Construction

Section Major Project - Continuing

W01402 Washington Park Reservoir 3



Kelly Butte Reservoir

A. Scope	
Original Description / Purpose:	This project increased storage capacity from 10MG to 25MG by replacing the existing tank with a buried reservoir. This included site access, construction access and easements, staging areas, and on-site storage areas. This project established Kelly Butte as the water body that will be used for system pressure equalization and in-town terminal storage, once the Mt Tabor open reservoirs are disconnected from the water system.
Rationale: Plans/Studies & Specifics	This project is critical and needed because of LT2 elimination of open reservoirs and is a project identified in the 2009 EPA approved LT2 Storage Plan.
Major changes since start:	#1: Sept '10: added scope to Church of Nazarene property, schedule delay from Mar '14 to Sept '14. #2, 8/2011: schedule delay to Dec '14 due to land use permit, contracting and technical reviews. Cost decrease from $90M. #3: May '12: OHA denied PWB request for LT2 compliance delay and confirmed the 3/27/09 schedule. #4: Sept '12: Council approved construction and we adjusted project cost and schedule. #5: Mar '13: schedule and cost moved up per compliance schedule. #6: June '13: total decreased and cash flow changed. 8/14: Schedule increased for startup-commissioning and testing, total decreased. Mar '15: reduced contingency, rebudget to match remaining work. Mar '16: total reduced due to savings.
Other info / Coordination:	The 2009 initial project estimate was $90M. "Other" costs in Section E were mainly interagency charges for permits, materials testing and miscellaneous fees. All work was complete; project will be closed during FY 16-17. Total project cost will be $63.6 M.

B. Schedule	
Initial mention:	3/27/2009
Initial planned comp:	12/31/2014
Current planned comp:	9/28/2016

C. Cost Plan	
Initial total cost est:	$78,245,060
FY 15-16 plan on 10/2015:	$4,260,000
FY 15-16 plan on 5/2016:	$3,000,000
Overall rate impact %:	4.541
Debt service, FY 16-17 est:	$3,436,586
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01424
Program:	Transmission & Terminal Storage
Subprogram:	Terminal Reservoirs
Nearest Address:	9715 SE Powell Blvd

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$298,157	$298,157		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$6,062,479	$6,062,479		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$56,554,430	$56,454,430		$100,000	$0	$0	$0	$0	$0	$0
Other (e.g.contingency	$655,293	$655,293		$0	$0	$0	$0	$0	$0	$0
Sum	$63,571,000	$63,470,359		$100,000	$0	$0	$0	$0	$0	$0

040 Construction

Section Major Project - Continuing

W01424 Kelly Butte Reservoir

Tabor Reservoir Adjustments

A. Scope	
Original Description / Purpose:	This project provides adjustments to piping, structures and other features at Mt. Tabor in order to move storage elsewhere and physically disconnect the open reservoirs from the public water system for compliance with LT2. Project will be done in a manner to protect the existing historical structures.
Rationale: Plans/Studies & Specifics	This project is critical and needed because of LT2 elimination of open reservoirs and is a project identified in the 3/27/09 EPA approved LT2 Storage Plan. This project must be complete in order to disconnect Reservoirs #1, #5 and #6 from the public water system.
Major changes since start:	#1 June 2010: reduced scope and costs from $42M to $5M. # 2 Sept 2011: Project on hold. #3 May 2012: OHA denied request to delay LT2 compliance and told to meet 3/27/2009 schedule. #4 Sept 2012: adjust fiscal years funding. #5 Fall 2012: Split project into 2 projects for ROW vs onsite work. #6 April 2013: scope, schedule and budget increase. #7 June 2013: changed project total and cash flow. # 8 Aug 2014: permitting, scope and outreach changes increased costs. 3/15: add scope, duration, cost and increased contingency per land use conditional approval.
Other info / Coordination:	Lifecycle cost changes depend on what happens to the open reservoirs after they are disconnected from the public water system.

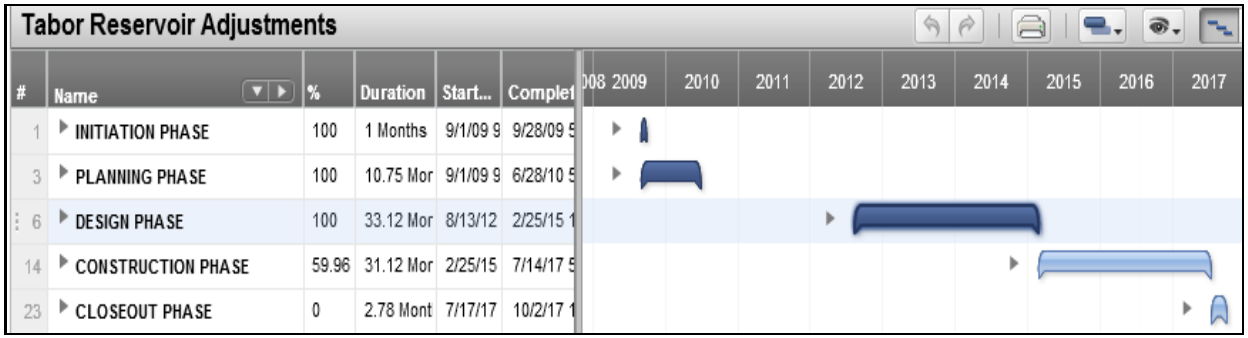
B. Schedule	
Initial mention:	3/27/2009
Initial planned comp:	June 2016
Current planned comp:	10/2/2017

C. Cost Plan	
Initial total cost est:	$6,406,994
FY 15-16 plan on 10/2015:	$4,437,000
FY 15-16 plan on 5/2016:	$3,400,000
Overall rate impact %:	0.582
Debt service, FY 16-17 est:	$440,311
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01524
Program:	Transmission & Terminal Storage
Subprogram:	Terminal Reservoirs
Nearest Address:	Tabor Reservoir

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$53,218	$53,218		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$1,902,231	$1,902,231		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$6,188,936	$3,229,936		$2,800,000	$159,000	$0	$0	$0	$0	$0
Other (e.g.contingency	$409	$409		$0	$0	$0	$0	$0	$0	$0
Sum	$8,145,000	$5,185,794		$2,800,000	$159,000	$0	$0	$0	$0	$0



040 Construction

Section Major Project - Continuing

W01524 Tabor Reservoir Adjustments

Headworks Generator Improvements

A. Scope	
Original Description / Purpose:	This project will improve Headworks' emergency power supply system by installing a new emergency generator, fuel storage tank, and associated site electrical components as recommended by the Headworks Facilities Plan.
Rationale: Plans/Studies & Specifics	The Headworks Facilities Plan recommended a new emergency generator, switchgear and site electrical panels to support current electrical loads. As a result, site personnel are at an increased health and safety risk. The Plan identified 14 projects to reduce risks posed to the Portland Water Bureau's water treatment and supply system. Of the 14, improvements to the Headworks emergency generator, switchgear and site electrical panels would provide the greatest reduction in risk by mitigating 3 occurrences of high risk, and is thus the first recommended project.
Major changes since start:	Nov 2014: Fall Budget change as a new Major project. March 2016: project being replanned; cost and schedule changes ahead to reduce the project.
Other info / Coordination:	

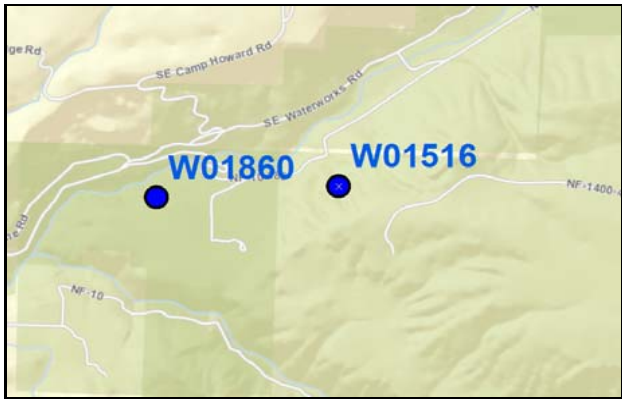
B. Schedule	
Initial mention:	July 2014
Initial planned comp:	November 2018
Current planned comp:	5/17/2019

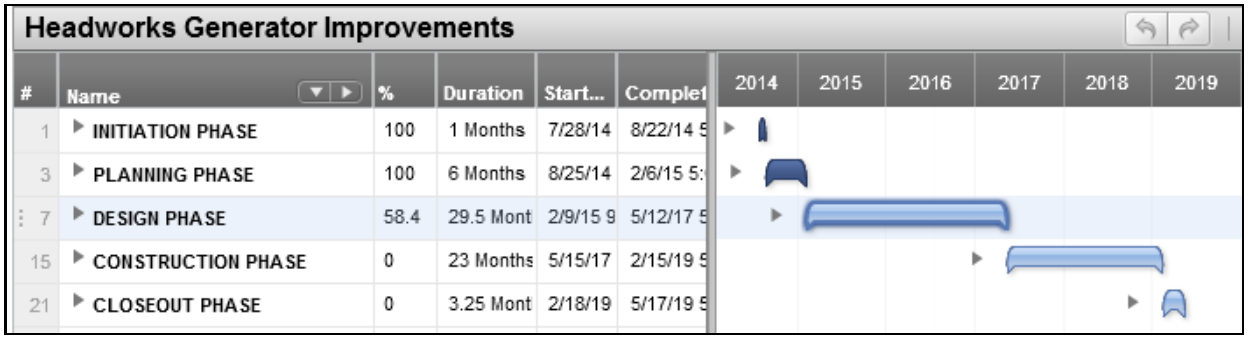
C. Cost Plan	
Initial total cost est:	$1,670,000
FY 15-16 plan on 10/2015:	$275,000
FY 15-16 plan on 5/2016:	$134,000
Overall rate impact %:	0.119
Debt service, FY 16-17 est:	$90,279
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01860
Program:	Treatment
Subprogram:	Treatment
Nearest Address:	Headworks near Powerhouse Rd

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)	FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$35,643	$35,643	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$254,319	$129,319	$125,000	$0	$0	$0	$0	$0	$0
Construction & Land	$1,380,000	$0	$175,000	$890,000	$315,000	$0	$0	$0	$0
Other (e.g.contingency	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sum	$1,670,000	$164,962	$300,000	$890,000	$315,000	$0	$0	$0	$0





030 Design

Section Major Project - Continuing

W01860 Headworks Generator Improvements

Chlorine Scrubber Replacement

A. Scope	
Original Description / Purpose:	This project will replace the existing liquid media chlorine scrubber with a new dry media chlorine scrubber at the Headworks facility.
Rationale: Plans/Studies & Specifics	The existing chlorine scrubber is at the end of its useful life, requires frequent maintenance, poses safety hazards. The Headworks Facilities Plan has given the the project a High CLEM rating. The new dry scrubber unit reduces maintenance costs and considerably lowers the risk of a safety issue. The business case recommended replacement with a benefit to cost ratio of 1.1.
Major changes since start:	
Other info / Coordination:	No material change in maintenance costs. This project contingency is less than 10% as we have recent cost estimates for the equipment and installation is primarily above ground with minimal risks during construction.

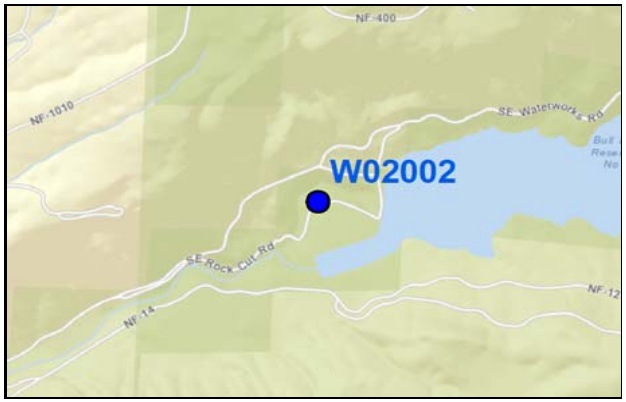
B. Schedule	
Initial mention:	July 2015
Initial planned comp:	June 2018
Current planned comp:	6/7/2018

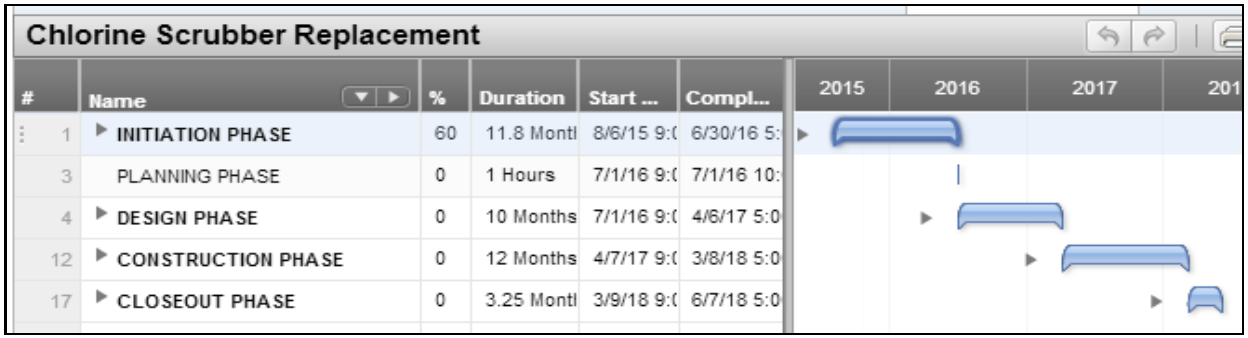
C. Cost Plan	
Initial total cost est:	$485,000
FY 15-16 plan on 10/2015:	$0
FY 15-16 plan on 5/2016:	$0
Overall rate impact %:	0.035
Debt service, FY 16-17 est:	$26,219
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02002
Program:	Treatment
Subprogram:	Treatment
Nearest Address:	Headworks

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2016)		FY 16-17 (FY0 Plan)	FY 17-18 (FY1 Plan)	FY 18-19 (FY2 Plan)	FY 19-20 (FY3 Plan)	FY 20-21 (FY4 Plan)	FY 21-22 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$84,432	$432		$84,000	$0	$0	$0	$0	$0	$0
Construction & Land	$394,000	$0		$0	$394,000	$0	$0	$0	$0	$0
Other (e.g.contingency	$5,000	$0		$0	$5,000	$0	$0	$0	$0	$0
Sum	$485,000	$432		$85,000	$399,000	$0	$0	$0	$0	$0





030 Design

Section Major Project - Continuing

W02002 Chlorine Scrubber Replacement

This CIP Annual Report for Fiscal Year 2015-16 is available on the Portland Water Bureau website:

https://www.portlandoregon.gov/water/cipar